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A Sandhills
Publication

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In Plain English

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Software p.42**

**Optimize Your
Monitor For
Win98 p.30**



IBM recommends Microsoft® Windows® XP Professional.



IBM ThinkPad X40

GO with IBM Think Express Program

IBM Think Express models are configured and priced with small to medium-size businesses in mind.

IBM rated #1 in tech support for desktops and notebooks by PC Magazine readers. PC Magazine 17th Annual Reader Satisfaction Survey – July 14, 2004

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Our ultraportable notebook has never been easier to carry.

Trains. Planes. Automobiles. Three reasons not to lug around a heavy notebook. So, when you're away from the office and working wirelessly, use an IBM ThinkPad® X40 notebook, with Intel® Centrino™ Mobile Technology (on select models). They're our thinnest, lightest¹¹ notebooks ever. Yet, they're really big on features, like a full-size keyboard.¹⁰ Some models are just 2.7 lbs. Other models feature the longest standard battery life of any leading brand notebook²¹ (8-cell battery required, not shown). The IBM ThinkPad X40. Fast and powerful, in a surprisingly convenient take-home size.

You might want to keep an eye on it.

Ultralight weight. Longest-lasting standard battery.
Only on a ThinkPad.

1 866 426-6647 | **ibm.com/shop/m539**



MOBILE TECHNOLOGY

IBM ThinkPad R51

Ultimate Value

Distinctive IBM Innovations:

- IBM Embedded Security Subsystem 2.0¹ – Strongest security as a standard feature (Excluding IBM models with Integrated Fingerprint Reader)
- IBM Access Connections – switch between wired and wireless connections

System Features:

- Intel® Centrino™ Mobile Technology
 - Intel® Pentium® M Processor 715 (1.50GHz)²
 - Intel® PRO/Wireless Network Connections 802.11b/g³
- Microsoft Windows XP Professional⁴
- 14.1" XGA TFT display (1024x768)
- 256MB DDR SDRAM⁵
- 30GB hard drive⁶
- Ultrabay™ Enhanced CD-RW/DVD-ROM combo
- IBM UltraConnect™ Antenna for increased signal strength
- 1-yr system/battery limited warranty⁸

NavCode 28838QU-M539

THINK EXPRESS MODEL PRICED AT: **\$1,299***

\$46/mo for 36 months

SuccessLease for Small Business¹⁹

ServicePac® Service Upgrade:⁹

3-yr Depot Repair #30L9192 **\$132**

IBM ThinkPad X40

Our thinnest and lightest

Distinctive IBM Innovations:

- IBM Embedded Security Subsystem 2.0 – Strongest security as a standard feature
- IBM Rescue and Recovery™ – One-button recovery and restore solution

System Features:

- Intel® Centrino™ Mobile Technology
 - Intel® Pentium® M Processor ULV 1.1GHz
 - Intel® PRO/Wireless Network Connection 802.11b/g
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- 256MB DDR SDRAM
- 20GB hard drive
- Integrated Gigabit Ethernet and modem
- Legendary IBM full-size keyboard¹⁰
- Only .94" thin¹¹
- 2.7-lb travel weight¹²
- 1-yr system/battery limited warranty⁸

NavCode 2386A4U-M539

THINK EXPRESS MODEL PRICED AT: **\$1,499***

\$53/mo for 36 months

SuccessLease for Small Business

center. Calls must be received by 5pm local time in order to qualify for Next Business Day service. **(10) Full-size keyboard:** As defined by ISO/IEC 15412. **(11) Thinness:** may vary at certain points on the system. **(12) Travel weight:** includes battery and optional travel bezel instead of standard optical drive in Ultrabay bay, if applicable; weight may vary due to vendor components, manufacturing process and options. **(13) Public network access limited:** Subscription may be required and fees may apply. **(19) SuccessLease:** SuccessLease program, rates and terms are provided by third-party financiers approved by IBM Global Financing to credit-qualified business customers installing in the U.S. Featured monthly lease payments based on prespecified end-of-lease purchase option; documentation fee and first month's payment due at lease signing; taxes are additional. Options cannot be leased separately. IBM and IBM Global Financing reserve the right to alter product offerings, specifications or financing terms at any time, without notice. **(21) Battery Life:** Based on manufacturer's published figures or CNET.com results for the top 5 vendors in 2003 notebook sales based on IDC data as of 1/29/2004. **Trademarks:** The following are trademarks or registered trademarks of IBM Corporation: IBM, the IBM logo, Rapid Restore, Rescue and Recovery, ThinkPad, Ultrabay, UltraConnect and UltraNav. Microsoft and Windows are registered trademarks of Microsoft Corporation. Intel, Intel Xeon, Intel Inside, Intel Inside logo, Intel Centrino, Intel Centrino logo, Intel SpeedStep and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product and service names may be trademarks or service marks of other companies. ©2004 IBM Corporation. All rights reserved.

Visit www.ibm.com/pc/safecomputing periodically for the latest information on safe and effective computing.

Take a look at some of our latest models. And get connected.



Why IBM ThinkPad Notebooks?

To make IBM ThinkPad® notebooks even more valuable, each one featured here can give you the efficiency, productivity and edge you need and comes with all the following ThinkVantage™ Technologies:

IBM Active Protection System: Butterfingers unite! Select IBM ThinkPad notebooks now include airbag-like technology to help protect your hard drive from some damage caused by drops and jolts.

NEW! Rescue and Recovery: Lost your data because of a software crash or virus? Recover previously saved data in minutes with our one-button solution.

Access Connections: Switch between wired and wireless connections.

Embedded Security Subsystem 2.0:¹ Hackers and thieves, beware. Our combined hardware and software solution is designed to protect user data and keep it private.

Access IBM: Get the help you need, when you need it. One button on your ThinkPad notebook brings you a world of resources and assistance.

IBM ThinkPad R51

System Features:

- Intel® Centrino™ Mobile Technology
- Intel® Pentium® M Processor 725 (1.60GHz)²
- Intel® PRO/Wireless Network Connection 802.11b/g³
- Microsoft Windows XP Professional⁴
- 15" XGA TFT display (1024x768)
- 256MB DDR SDRAM⁵
- 40GB hard drive⁶
- Integrated Ethernet and modem
- IBM Ultrabay™ Enhanced CD-RW/DVD-ROM combo
- IBM UltraConnect™ Antenna for increased signal strength
- 1-yr system/battery limited warranty⁸

NavCode 1836Q4U-M539

THINK EXPRESS MODEL
PRICED AT:

\$1,449*

\$52/mo for 36 months
SuccessLease for Small Business¹⁰



IBM ThinkPad T42

System Features:

- Intel® Centrino™ Mobile Technology
- Intel® Pentium® M Processor 725 (1.60GHz)
- Intel® PRO/Wireless Connection 802.11b
- Microsoft Windows XP Professional
- 15" XGA TFT display (1024x768)
- 32MB ATI Mobility RADEON 7500 graphics
- 256MB DDR SDRAM
- 30GB hard drive
- Integrated Gigabit Ethernet and modem
- IBM Ultrabay Slim DVD-ROM
- IBM UltraConnect Antenna for increased signal strength
- 1-yr system/battery limited warranty⁸

NavCode 2378R7U-M539

THINK EXPRESS MODEL
PRICED AT:

\$1,599

\$58/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade¹²:
3-yr Depot Repair #30L9192 **\$132**

IBM ThinkPad T42

IBM ThinkVantage Technologies:

- Integrated Fingerprint Reader – Your passwords at the tip of your finger.

System Features:

- Intel® Centrino™ Mobile Technology
- Intel® Pentium® M Processor 735 (1.70GHz)
- Intel® PRO/Wireless Network Connection 802.11b/g
- Microsoft Windows XP Professional
- 15" XGA TFT display (1024x768)
- 32MB ATI Mobility RADEON 7500 graphics
- 512MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- IBM Ultrabay Slim CD-RW/DVD-ROM combo
- IBM UltraConnect Antenna for increased signal strength
- 3-yr system/1-yr battery limited warranty⁸

NavCode 2379R8U-M539

THINK EXPRESS MODEL
PRICED AT:

\$2,179

\$78/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade:
4-yr Onsite Repair/Next Business Day Response #69P9198 **\$299**



IBM ThinkPad X40

System Features:

- Intel® Centrino™ Mobile Technology
- Intel® Pentium® M Processor LV 1.40GHz
- Intel® PRO/Wireless Connection 802.11b/g
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- Intel Extreme Graphics 2
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- Legendary IBM fullsize keyboard¹⁴
- 7.5-hr Li-Ion battery¹⁵
- 1-yr system/battery limited warranty⁸

NavCode 2386E9U-M539

THINK EXPRESS MODEL
PRICED AT:

\$1,749

\$62/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade:
3-yr Onsite Repair/9x5/Next Business Day Response #30L9195 **\$243**

IBM ThinkPad X40 Solution Pack

IBM ThinkVantage Technologies:

- Longest standard battery life of any leading-brand notebook²¹

System Features:

- Intel® Centrino™ Mobile Technology
- Intel® Pentium® M Processor LV 1.40GHz
- Intel® PRO/Wireless Network Connection 802.11b/g
- Microsoft Windows XP Professional
- 12.1" XGA TFT display (1024x768)
- 256MB DDR SDRAM
- 40GB hard drive
- Integrated Gigabit Ethernet and modem
- 7.5-hr Li-Ion battery
- 3-yr system/1-yr battery limited warranty⁸

Accessories Included:

- ThinkPad X4 UltraBase Dock
- IBM Ultrabay Slim CD-RW/DVD-ROM combo

NavCode 2382ECU-M539

THINK EXPRESS MODEL
PRICED AT:

\$2,149

\$76/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade:
5-yr Onsite Repair/9x5/Next Business Day Response #69P9200 **\$449**



(Monitor not included)

Why IBM ThinkCentre PCs?

Only IBM offers these features to protect your users, connect them, and keep them working. Each ThinkCentre™ desktop featured here can give them the efficiency, productivity and edge they need with the following ThinkVantage Technologies:

Rescue and Recovery: Lost your data because of a software crash or virus? Recover previously saved data in minutes with our one-button solution.

Access IBM: Get the help you need, when you need it. One button on your ThinkCentre desktop brings you a world of IBM resources and assistance.

IBM ThinkCentre A50 Tower form factor

System Features:

- Intel® Pentium® 4 Processor with HT Technology 3.0GHz
- Microsoft Windows XP Professional
- Intel® Extreme Graphics 2
- 256MB DDR PC3200⁵
- 40GB hard drive • CD-ROM
- Integrated 10/100 Ethernet
- Norton AntiVirus™ with 90 days of virus definition updates
- Lotus® SmartSuite® Millennium license
- 1-yr parts limited warranty with 1-yr limited onsite service¹⁷

NavCode 814821U-M539

THINK EXPRESS MODEL
PRICED AT:

\$649

\$23/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade:
2-yr Onsite Repair/9x5/Next Business Day Response #54P1859 **\$75**

NavCode® Get the latest pricing and information fast. Use NavCode on the phone or on the Web.

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IBM recommends Microsoft® Windows® XP Professional.



(Monitor not included)

IBM ThinkCentre A50 Ultra small form factor

System Features:

- Intel® Pentium® 4 Processor with HT Technology 3.0GHz
- Microsoft Windows XP Professional
- Intel® Extreme Graphics 2
- Ultra small form factor – 74% smaller than a standard IBM desktop¹⁶
- 256MB DDR PC3200
- 40GB hard drive • CD-ROM
- Gigabit-Ethernet Integrated
- Norton AntiVirus with 90 days of virus definition updates
- Lotus SmartSuite Millennium license
- 1-yr limited warranty with limited onsite service¹⁷

NavCode 809021U-M539

THINK EXPRESS MODEL
PRICED AT:

\$829

\$30/mo for 36 months
SuccessLease for Small Business
ServicePac Service Upgrade:
3-yr Onsite/9x5/Next Business Day
Response #54P1861 **\$132**

IBM ThinkCentre A51p Tower form factor (model not shown)

System Features:

- Intel® Pentium® 4 Processor 530 with HT Technology
 - Processor speed 3.0GHz
 - 800MHz FSB
- Microsoft Windows XP Professional
- Intel® Graphics Media Accelerator 9000
- 256MB DDR2 PC2-3200
- 40GB hard drive • CD-RW
- Gigabit Ethernet-integrated
- IBM Embedded Security Subsystem 2.0
- 1-yr parts limited warranty with 1-yr limited onsite service¹⁷

NavCode 842721U-M539

THINK EXPRESS MODEL
PRICED AT:

\$799

\$29/mo for 36 months
SuccessLease for Small Business

ServicePac Service Upgrade:
3-yr Onsite/9x5/4-hr Response
#54P1862 **\$239**



IBM eServer BladeCenter

System Features:

- Flexible – full performance and manageability of traditional rack optimized platforms
- Infrastructure integration – help lower TCO and increase control
- Simplify – easy to deploy, easy to install, easy to manage

HS20

- Intel® Xeon™ 2.8GHz/533Mhz FSB
- 40GB IDE/2GB DDR2 PC2100
- 3-year limited warranty

NavCode 8832LEX-M539

EXPRESS MODEL PRICED AT:

\$2,589

BladeCenter Chassis

- 7U rack mount chassis – up to 14 blades per chassis
- 2000W power
- Cisco Ethernet switch module

NavCode 86773EU-M539

EXPRESS MODEL PRICED AT:

\$7,289

\$258/mo for 36 months
SuccessLease for Small Business

ServicePac Service Upgrade:
3-yr Onsite/9x5/4 hr Response
HS20 #69P9517 **\$279**
BladeCenter Chassis 41L2736 **\$600**

IBM eServer xSeries 336

System Features:

- Leading performance with Intel's EM64T technology – 32 and 64bit simultaneous computing
- High Availability with redundant power and hot swap fans – Calibrated Vectored Cooling enables density and performance
- Simple Management with on board service processors and optional remote management support – take control of your server environment
- Intel Xeon 2.8GHz/800Mhz FSB
- Two 73GB SCSI/2GB DDR2 PC3200

NavCode 88370EU-M539

EXPRESS MODEL
PRICED AT:

\$3,349

\$119/mo for 36 months
SuccessLease for Small Business

ServicePac Service Upgrade:
4-yr Onsite/9x5/4-hr Response
#69P9243 **\$609**



The IBM Infoprint® 1412

System Features:

- Enhance your system with Monochrome Laser/200 MHz processor
- Speed: Print up to 27 pages-per-minute (ppm)²⁰
- First page-out time as fast as 8 seconds²⁰
- Print quality: up to 2400 image quality
- 32MB of memory
- Parallel and USB attachment and 10/100 Base TX Fast Ethernet interfaces
- 1-yr limited warranty¹⁷

NavCode 75P5759-M539

PRICED AT

BASE = **\$429**

NavCode 75P5760-M539

NETWORK = **\$519**

250 Sheet Tray #75P6112 **\$92**

ServicePac Service Upgrade:
1-yr Onsite/9x5/Next Business Day
4-yr Response #29R5518 **\$47**

IBM InfoPrint Express Offerings:

Easy to buy. Easy to deploy. Priced right.

Special Edition InfoPrint® 1422n Express Bundle

System Features:

- Monochrome Laser/366 MHz processor
- Speed: Print up to 32 pages-per-minute (ppm)²⁰
- First page-out time as fast as 9 seconds²⁰
- Print quality: up to 2400 image quality
- Up to 64MB of memory
- Parallel and USB attachment and 10/100 Base TX Fast Ethernet interfaces
- 1-yr limited warranty¹⁷

Bundle Includes:

- Duplex Capability
- Additional 250-sheet drawer

NavCode 75P6795-M539

PRICED AT:

\$879

\$32/mo for 36 months
SuccessLease for Small Business



**MOBILE
TECHNOLOGY**

IBM Think Express Program:

We've configured and priced many of our products specifically for small and medium businesses. And best of all, they're available direct from IBM or through select IBM Business Partners.

IBM ThinkPad Accessories

Belkin Components Universal Notebook Travel Surge Protector

#22P7127 **\$20**

Targus Wireless Optical Mini Mouse

#22P7438 **\$27**

IBM ThinkPad Carrying Case¹⁸ – Expander

#73P3597 **\$59**

ThinkPad 72W AC/DC Combo Adapter

#22P9010 **\$99**

ThinkPad Port Replicator II

#74P6733 **\$179**

IBM ThinkCentre Accessories

IBM UPS 500

#33L3477 **\$99**

IBM ThinkVision™ L170p 17" Flat Panel

Monitor with system purchase

#W9SPH80 **\$449**

IBM Server Accessories

IBM S2 42U Standard Rack Cabinet

#93074SX **\$1,489**

IBM Rackmount XLV 3000VA UPS

#2130R30 **\$1,799**



1 866 426-6647 | **ibm.com/shop/m539**

Calls must be received by 5pm local time in order to qualify for Next Business Day Service. (14) **Full-size keyboard:** As defined by ISO/IEC 15412. (15) **Battery:** These model numbers achieved the Ziff Davis Media, Inc.'s Business Winstone® 2002 BatteryMark™ Version 1.0 Battery Run-down Time of at least the time shown. This test was performed without independent verification by the VeriTest testing division of Lionbridge Technologies, Inc. ("VeriTest") or Ziff Davis Media, Inc.; neither Ziff Davis Media, Inc. nor VeriTest makes any representations or warranties as to these test results. Winstone is a registered trademark and BatteryMark is a trademark of Ziff Davis Publishing Holdings, Inc., in the U.S. and other countries. A description of the environment under which the test was performed is available at ibm.com/pc/www/thinkpad/batterylife. Battery life (and recharge times) will vary based on many factors including screen brightness, applications, features, power management, battery conditioning and other customer preferences. (16) **Size claims:** are based on a comparison of chassis volume to the volume of IBM's standard desktop chassis. (17) **Systems with limited onsite service:** are designed to be repaired during the applicable warranty period primarily with customer-replaceable parts provided by IBM. IBM will only send a technician onsite to perform a repair if (a) remote telephone diagnosis and/or customer part replacement are unable to resolve the problem, or (b) the part is one of the few designated by IBM for onsite replacement. For a list of onsite replaceable parts, contact IBM. Support unrelated to a warranty issue may be subject to additional charges. (18) **Certain IBM logo products:** are not manufactured, warranted or supported by IBM; IBM logos and trademarks used under license. Contact IBM for details. (19) **SuccessLease:** SuccessLease program, rates and terms are provided by third-party financiers approved by IBM Global Financing to credit-qualified business customers installing in the U.S. Featured monthly lease payments based on prespecified end-of-lease purchase option; documentation fee and first month's payment due at lease signing; taxes are additional. Options cannot be leased separately. IBM and IBM Global Financing reserve the right to alter product offerings, specifications or financing terms at any time, without notice. (20) **Print speed:** Exact speed varies depending on document complexity, system configuration, software application, driver and printer state. (21) **Battery Life:** Based on manufacturer's published figures or CNET.com results for the top 5 vendors in 2003 notebook sales based on IDC data as of 1/29/2004. **Trademarks:** The following are trademarks or registered trademarks of IBM Corporation: IBM, the IBM logo, ImageUltra, Lotus, NavCode, Rapid Restore, Rescue and Recovery, SmartSuite, ThinkCentre, ThinkPad, ThinkVantage, ThinkVision, UltraBase, UltraConnect, UltraBay, UltraNav. Microsoft and Windows are registered trademarks of Microsoft Corporation. Intel, Intel Xeon, Intel Inside, Intel Centrino, Intel Centrino logo, Intel SpeedStep and Pentium are trademarks or registered trademarks of Intel Corporation or its subsidiaries in the United States and other countries. Other company, product and service names may be trademarks or service marks of other companies. © 2004 IBM Corporation. All rights reserved. Visit www.ibm.com/pc/safecomputing periodically for the latest information on safe and effective computing.

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In Plain English

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COVER STORY



Web Freebies

58 For Work & Play

Productivity and entertainment freeware are yours for the taking, as long as you know where to find them. We located the best among Web browsers, email clients, personal finance applications, office productivity software, computer games, and multimedia players.

61 The Right Tool For The Job

We scoured the Web for the finest free system utilities and found an assortment of antivirus apps, anti-spyware products, firewalls, Registry optimizers, file converters, spam filters, and search toolbars.

64 Gratis Service

Despite the Web's continuing shift toward commercialism, we were able to uncover several free gems that offer valuable services, including maps and directions, photo sharing, online calculators, travel assistance, translation aides, computer component shopping, and online storage.

Free Tech Support



68 Fast, Free & Friendly

Find out why our new Tech Support Center is the best bargain around. This one-stop shop has something for everyone.

70 Get Smart

As a *Smart Computing* subscriber, you have complete access to all of the resources at our Web site. We show you how to take advantage of this by searching our article archives, reading content from our sister publications, and using all of the extras SmartComputing.com provides.

74 Preferred Features

Some of the favorites our subscribers regularly use at SmartComputing.com include hardware and software reviews, comparison charts, our Q&A Board, search options that scour the archives from our six computing publications, and a My Personal Library feature that lets you store links to articles.

76 Got Questions?

If you need answers, SmartComputing.com is the place to start your hunt. Its Tech Support Center includes interpretations of error messages, maintenance suggestions, installation articles, troubleshooting advice, information about security and privacy, a list of the most popular Solutions Knowledgebase articles, as well as contact information for our Web Services team.

80 The Q&A Board

The first time you visit our Q&A Board, you'll immediately notice the sense of community our subscribers have created as they help each other solve computing problems, encourage technology-related discussions, and share tips on how to do things better and faster. We explain how to search through previous questions and answers, post new questions, answer other users' questions, and more.

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12 TechMates Flashy Portability

Sandy Berger researches all manner of computer products and presents a pairing that will help you make the most of the available technology.

17 Tech Diaries

Our Smart Computing columnists spent some quality time with computer and computer-related hardware to get beyond the benchmark scores, statistics, and marketing hype. Find out what they liked and disliked about their choices.

21 I Spy A Spy On The Prowl

What started out as a nuisance has become an epidemic; spyware infection is so rampant that we decided to review and compare several anti-spyware products to see which ones could offer you some relief.

24 Software

File Utilities:

Google Desktop Search 24

Communication:

BODA Foxmail 5 25

Security:

iolo System Mechanic 5 25

26 Impulse Items

Each month, we take a look at several useful gadgets and programs you can get for \$20 or less.



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PC Ops



28 Download & Install Windows XP Service Pack 2

As a dutiful Windows user, you want to stay up-to-date on patches and updates. Learn how to prep your system, install, and configure the latest WinXP fix.

30 Optimize Your Windows 98 Display

If you're among the Win98 faithful, chances are good you've upgraded your monitor since you purchased your system. Make the most of that new display—it's easier than you may think.



32 Take Advantage Of System Restore In Windows Me

While restore points aren't a cure-all for all that ails your PC, they can be useful in diagnosing and solving snafus. Read on to learn how to incorporate System Restore into your troubleshooting routine.



General Computing

36 How Did They Do That? Making Waves

Internet radio is the wave of the future. We'll explain how it's possible to listen to a radio station "broadcasting" from thousands of miles away.

38 The View From Behind The Desk

Tech support is a sticky issue for everyone involved, including those who dole it out. Hear what tech support specialists have to say about the services they provide.

42 Inching Toward Perfection

Despite what we'd like to think, nobody's perfect. Check out the flurry of self-improvement software available to get yourself one step closer to perfection.

44 The Eyes Have It

If you're blind or visually impaired, using a computer can be a challenge. All sorts of tools are out there to help these users take advantage of the latest technological offerings.

Plugged In

47 Mr. Modem's Desktop: Mr. Modem's Picks To Click

In which Mr. Modem, author of several books—none of which have won the Pulitzer Prize—and co-host of the weekly "PC Chat" radio show, presents a slew (possibly a slew-and-a-half) of his favorite sites.

48 Site Guide: Classified . . . But Not Top Secret

The online classifieds at craigslist can help you find a new job, a classic car, a cleaning service, a bigger apartment, a community playhouse, and much more.

53 Open Range

To help you make the most of your wireless network, we cover various methods and components that can extend its range.

56 Find It Online

January Web-Only Articles

Hardware

For all the latest product reviews, visit the Hardware Reviews & Comparison Charts area at SmartComputing.com (<http://www.smartcomputing.com>).

Software

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Editor's Note

If you have access to the Web, you have access to information—all the information you could ever want, and all of it delivered almost instantaneously. (And you will need it; no matter how bright you are, how well-read, or how experienced, there will come a time when you need some help: a name, an answer, a solution, a description.)

Thanks to the Internet, that help is available. It's an amazing technology, one that has truly democratized information. No more fruitless telephone calls, no more wondering if any of your friends happen to know the population of Botswana (1,561,973), the date of the next total lunar eclipse (March 3, 2007), or the phone number of Dairy Queen's corporate headquarters (952/830-0200).

Unfortunately, the Internet has also democratized *misinformation*. In amongst the sparkling gems on the Web are lumps of factual coal: The Great Wall of China is the only man-made object visible from space. (No, astronauts have seen highways, airports, and other such structures.) Henry Ford invented the automobile or the assembly line. (Nope, although he did improve both and made them affordable and more efficient.) John F. Kennedy was the youngest president. (JFK was the youngest *elected* president, but Teddy Roosevelt was the youngest to hold the office.)

So, where do you go for real help? How do you separate the wheat from the chaff if the wheat is buried and the chaff does its best to look like wheat? And if you're trying to deal with a technical problem, things get even worse; you definitely don't want to waste your time reading things that *might* be solutions—but then again, might not be. And you certainly don't want to *pay* for that technical support, not if you don't need to.

No, if you have a technical support issue, come to us. Our new Tech Support Center is friendly, fast, and free. (Yes, free.) This issue focuses on how to get the most out of your best technical support resource, the *Smart Computing* Web site.

Did I mention that it's free?



ROD SCHER, PUBLICATION EDITOR

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Now Available On Newsstands . . .



Computer Power User • Holiday Hardware Gift Guide

It's that time of the year again, and it's hard to gauge where 2004 has gone. Stop worrying about the past and read our in-depth guide to the best computer hardware computer power users should be looking at today. We provide budget alternatives and a shopping list to boot.



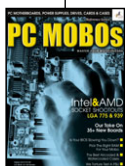
PC Today • Take The Worry Out Of Windows XP

If you use Windows XP and the Internet, you should be concerned about security, even if you've installed WinXP Service Pack 2. This month's *PC Today* explains what you need to know about WinXP security issues with and without SP2.



CE Lifestyles • February

Pick up *CE Lifestyles* for a look at how the latest digital cameras and other electronic gadgets can simplify your life.



Reference Series • PC MOBOs: Master Your Motherboard

Whether you're building a brand new system or just trying to coax a little more juice out of your old one, you won't get far without mastering your mobo. Read *PC MOBOs* to get all the tips and tech advice you need along with reviews of dozens of hot new boards, cases, power supplies, and everything else your system needs.

Corrections/Clarifications

In the December gift guide, we wrote that the Konica Minolta DiMAGE X31 digital camera includes a movie feature with audio capabilities. This model does not record audio.





This DVD Will Self-Destruct In 5 . . . 4 . . . 3 . . .

We have yet to see messages that self-destruct like they do in spy movies, but a new take on another common medium does just that. The new destructible DVD works in standard DVD players, but after you open its vacuum-sealed package, you have 48 hours to view its contents before it oxidizes and renders itself unreadable.

Marketed under the Flexplay and EZ-D brands, the technology could appeal to Hollywood by creating new marketing schemes that could boost movie sales even further. The Atlanta-based Convex Group, which acquired Flexplay in October, announced it would release a Flexplay version of the Christmas movie "Noel" at Amazon.com the same

day in November that the movie premiered in theaters.

"Flexplay creates new opportunities for content providers to reach more people, retailers to offer new products, and consumers to have more choices," says Convex CEO Jeff Arnold. But even though destructible DVDs give consumers the opportunity to watch movies without having to worry about returning DVDs to rental stores, there's no guarantee that everyone else will buy into the concept anytime soon.

Just as consumers can watch destructible DVDs as many times as they like within the 48-hour window, they also can copy them as often as they like because the discs don't prevent copying. As Hollywood continues to seek solutions for piracy, it appears—at least initially—that destructible DVDs aren't necessarily the answer. Also, movie producers probably won't be thrilled with losing a percentage of the typically massive returns of opening weekend, a loss that would be felt equally by the cinemas.

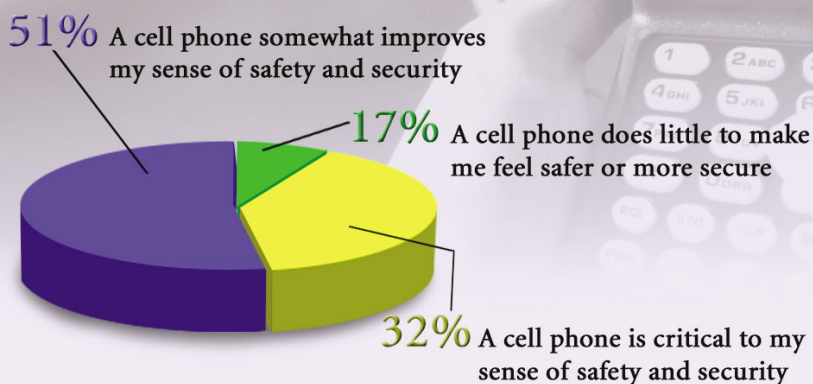
But for people who pour hundreds or thousands of dollars into home theaters, the allure of watching movies at home that are currently in movie theaters is huge, and if the pattern of "Noel" continues with future releases, many former moviegoers would surely be happy to ditch the ringing mobile phones, whining kids, and sticky floors that are part and parcel in too many theaters today.

Our Mobile Guardians

According to a recent study by Harris Interactive, most (74%) U.S. adults carry cell phones to help them feel more safe and secure. The study also revealed that 56% of cell phone owners carry one to stay connected, 11% to stay informed, 11% out of social necessity, and 2% for entertainment purposes.

Safety Cells

A survey of 2,138 cell phone owners conducted by Harris Interactive found that adults rely on their phones for a feeling of safety and security. The following are results from the study:



Google Search Targets PC Desktop

The recent beta release of Google Desktop Search drew praise and alarm, due primarily to the tool's efficient ability to find not only files typically found during hard drive searches but also previously viewed Web pages, email, instant messages, and more.

Using a powerful indexing technology, Google's new tool refines hard drive searching by keeping a constantly updated index of existing files, new files, and changes to existing files. Even if you're a fan of the search functions built into Windows, it's tough not to appreciate the speed and ease Google Desktop Search touts. The utility even features a "cached" function

to view older versions of files, similar to the cached function available from Google's Web searches.



Because Google Desktop Search indexes information that's generally far more private than the material returned by the Windows search tool, privacy proponents warn that the utility could easily enable thieves to find usernames, passwords, financial data, and other sensitive information. For now, it seems as if users should only install Google Desktop Search if no other people have access to the computer because the utility makes it too easy to retrieve sensitive data.

Link Up To Ultra-Info

If you're a thrill seeker who's tired of teetering on the brink of information overload and want to take the plunge already, blinkx (<http://www.blinkx.com>) has what you need. With the company's free Web browser add-on, you can easily access documents, Web pages, new items, and even products for sale with just a few mouse clicks.

After installing the utility, you'll see a tiny, nonobtrusive toolbar at the top of your browser window near the minimize and maximize buttons. While viewing a Web page, you can select a word and click one of the buttons in the blinkx window to retrieve

more results from your local documents, Web pages, news sources, video clips, and/or Web logs.

The tool even appears when you're writing a document in Word, reading an Outlook email message, or working in other programs, creating a nice research tool without requiring a separate browser window. If you crave information and don't get enough from your current software, give blinkx a spin to ramp up your info intake.

R E V I E W

Stash It Away

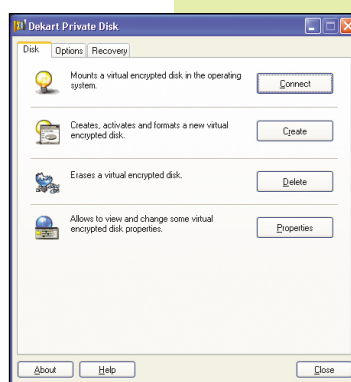
A firewall and antivirus program don't necessarily deliver enough protection for your computer, especially if other people have physical access to it. In fact, if your firewall isn't properly configured and your antivirus software isn't updated, someone doesn't even need physical access to your computer to steal information from it.

But locking down files and folders can be a complicated process in Windows XP, and using a third-party program to secure your files can be difficult—if not downright dangerous—because a buggy program could easily lose important files. Dekart Private Disk aims to overcome these roadblocks by creating a secure, easy-to-use environment where you can store files using 256-bit AES (Advanced Encryption Standard) encryption to prevent access to them by anyone but you.

Dekart Private Disk creates one or more virtual disks, or partitions, on your hard drive that appear in Windows Explorer as any other drive does, complete with its own drive letter. You can then "mount" this virtual drive to make it easily accessible for saving and accessing encrypted files. Even if you have no previous experience using file encryption, you should have no problem securing your files with Private Disk. The tool's smart interface offers easy access to

virtual drives, along with options for creating and activating new partitions, erasing partitions, and viewing or changing partition properties. Plus, these activities require few system resources. When you're done using the secure virtual drive, you can simply disconnect it, which prevents others from accessing the drive until you use a password to reconnect.

If you're using Windows 98/Me, you can encrypt up to only 2GB of space, so Private Disk is ultimately more useful for WinXP and Windows 2000 users, who can encrypt up to 1TB (terabyte, which equals about 1,000GB) of space. In any case, Private Disk's no-brainer simplicity combined with the strong AES encryption makes it a good choice for everyday file encryption.



Dekart Private Disk

\$45 • Dekart
<http://www.dekart.com>

The Sky Really *Is* Falling

Fancy car alarms aren't so fancy when they're not set. Deadbolts aren't so tough when they're not locked. And anti-virus software can't stop recent threats if it isn't updated. Yet, a recent study from NCSA (National Cyber Security Alliance) and AOL (America Online) indicates that two-thirds of computer users still don't update their antivirus definitions on a weekly basis.

Based on in-home surveys of typical dial-up and broadband computer users, the study revealed that people think they're safe, when in reality they're woefully lacking in security strong enough to provide adequate protection against viruses, crackers, spyware, and other threats. Even though 77% of users think their computers are very or somewhat safe from online threats and 73% think they're protected against viruses, 58% of users say they don't understand the difference between antivirus software and a firewall, and more than half don't understand what a firewall is. Furthermore, the study found a virus infection on the computers of one in every five users.

If these results aren't scary enough, consider the study's findings on spyware. Although 95% of users with spyware-infected systems claim they never gave permission for any of the programs to install on their computers, the average user's computer had 93 installed spyware and/or adware



components (one had a whopping 1,059 components). Most of these users admitted they don't know what spyware is or what it does. These findings are particularly surprising in light of the rampant symptoms across many of the users' computers. About 40% of users say their home page was changed without permission and that their search results were being redirected. Even 63% of users with a pop-up blocker still encountered pop-ups.

Despite these security problems, users still willingly transfer sensitive information to and from their computers. According to the study, 84% of users store health, financial, and similarly sensitive information on their computers, and 72% use their computers for sensitive activities such as banking transactions and viewing personal medical information.

REVIEW

Clean Computing

If you're still tethered to your mouse and keyboard by wires, consider the freedom you'd enjoy with a wireless mouse-keyboard combo. Plenty of wireless combos are available today, enough so that it's tough to discern much difference among the devices other than shape and size. But with Fellowes' new Cordless Combo, there's a feature that you can't even see: Both the mouse and keyboard have built-in Microban antimicrobial protection, which constantly battles common bacteria, yeasts, molds, and fungi that can cause stains, odors, and even product deterioration.

The Fellowes Cordless Combo might seem like another passenger on today's antibacterial/antimicrobial bandwagon, but the technology really makes sense. We're constantly touching our mice and keyboards, which means they naturally collect plenty of bacteria. If you can't remember the last time you cleaned your keyboard, this protection isn't such a bad idea (even if

it helps just a little), though

Fellowes stresses that the Microban protection isn't a substitute for regular cleaning. The hardware itself functions decently, with many of the functions intact that you'd expect from a wireless key-

board and optical mouse. The keyboard has a wonderful "clicky" feel to the keys, but the shortcut keys are relatively sparse and feel cheap. The scroll mouse is a bit on the thin side and has only three buttons, but, like the keyboard, it features a range beyond 6 feet in our tests.

Hardware-wise, there are better wireless combos on the market, but if you have kids who tend to mess up your devices or you work in similarly dirty conditions, this Microban-infused combo might be right up your alley.

Cordless Combo with Microban Protection

\$89.99 • Fellowes

(800) 955-0959

<http://www.fellowes.com>



Duly Quoted

"Customers don't want to talk to someone who's on eBay the whole time, hitting 'Refresh' every 30 seconds."

—C I Host CEO Christopher Faulker comments on cyberslacking, a practice his Web-hosting firm discourages by monitoring employees' keystrokes and keeping tabs on their Web activities. (Source: *San Francisco Chronicle*)

New Products

Compiled by Kylee Dickey

Quick takes on the latest hardware and software to hit the market at press time. Manufacturers' and publishers' release dates are subject to change, so some of the products may not be available when you read this.

Hardware

1GB Extreme III CompactFlash Card

SanDisk • \$139.99
Flash memory card with fast read and write speeds of at least 20MBps
(866) 726-3475; (408) 542-0500
<http://www.sandisk.com>

250GB OneTouch II 7200RPM External Hard Drive

Maxtor • \$329.95
External drive that comes with Dantz Retrospect backup software

Doesn't Even Need A Scroll Wheel

Logitech's latest notebook mouse, the V500 Cordless Notebook Mouse, features several design changes over previous models. One of the most noticeable is that the mouse lacks the standard scroll wheel. Instead, it has a scroll touchpad, which lets you scroll up, down, left, or right. Rest your finger at the edge of the touchpad to scroll continuously. The V500 also features a unique design in which the mouse's body contracts about 0.25 inches in height for easy storage, but its body easily expands and locks into place when you're ready to use it. The V500 is just 1.13 inches high (when contracted for storage) x 2.25 inches wide x 3.75 inches deep. A compartment in the bottom of the V500 stores the device's 2.4GHz RF (radio frequency) receiver (\$69.95; 800/231-7717; 510/795-8500; <http://www.logitech.com>). ■

(800) 262-9867; (949) 364-1208
<http://www.maxtor.com>

4340z

Concord Camera • \$149.99
A 4.2-megapixel digital camera with 3X optical zoom
(954) 331-4200
<http://www.concord-camera.com>

Active Noise Cancellation Headphones

Targus • \$49.99
Headphones that eliminate outside noise through both active and passive noise cancellation
(877) 482-7487; (714) 765-5555
<http://www.targus.com>

Boomtube

Virgin Electronics • \$99.99
Portable speakers that are just 2 inches long
(877) 487-8573
<http://www.virginelectronics.com>

diNovo Cordless Desktop

Logitech • \$149.95
Wireless keyboard and mouse with numeric keypad that doubles as a multimedia remote control
(800) 231-7717; (510) 795-8500
<http://www.logitech.com>

Easy Cat 2-Button USB Glidepoint Touchpad

Adesso • \$54.95
Replace your mouse with a touchpad
(909) 839-2929
<http://www.adesso.com>

FL-36 Electronic Flash

Olympus • \$249.99
External flash unit compatible with Olympus' E-Series D-SLR cameras

Logitech V500 Cordless Notebook Mouse



(800) 347-4027; (631) 844-5000
<http://www.olympusamerica.com>

ImageMate 12-in-1 Reader

SanDisk • \$34.99
Card reader that supports 12 types of flash memory
(866) 726-3475; (408) 542-0500
<http://www.sandisk.com>

io2 Digital Writing System

Logitech • \$199.95
Use this pen with Logitech's digital paper to create digital files from handwritten notes
(800) 231-7717; (510) 795-8500
<http://www.logitech.com>

ND-3500A

NEC • \$99.99
16X internal, double-layer DVD drive that stores up to 8.5GB on one DL DVD+R
(916) 463-7000
<http://www.necsam.com>

PC Gaming Keyboard

Saitek • \$59.95
Has backlit keys, adjustable wrist rest, and programmable command pad
(310) 212-5412
<http://www.saitekusa.com>

Player 5GB

Virgin Electronics • \$249.99
Digital music player with a built-in FM tuner and dual headphone jacks

(877) 487-8573
<http://www.virginelectronics.com>

SanDisk Photo Album

SanDisk • \$49.99
Store up to 2,000 digital photos and watch photo slideshows on your television
 (866) 726-3475; (408) 542-0500
<http://www.sandisk.com>

Software

Abacre Antivirus

Abacre • \$24.99
Software runs in the background to block viruses, worms, and Trojan horses
support@abacre.com
<http://www.abacre.com>

ActiveRefresh 2.2

Sisyph • \$29.95
Utility that automatically collects the online news articles you request
sales@activerefresh.com
<http://www.activerefresh.com>

Actual Window Manager 3

Actual Tools • \$39.95
Adds new buttons to Windows title bars for easier navigation
sales@actualtools.com
<http://www.actualtools.com>

Andrew's Plugins Volumes 1-17 Collection

Abneil Software • \$47.99
17 collections of Photoshop plug-ins, including blur, edge-effect, and color-effect tools
support@graphicxtras.com
<http://www.graphicxtras.com>

Art Parts CD-RON 6

Ron and Joe • \$189
Over 650 pieces of clip art, each available in both EPS and WMF formats
 (714) 834-9166
<http://www.ronandjoe.com>

Home Movies On DVD

In the future, when your family pulls out old home movies, they may very well be in DVD format, thanks to programs such as CyberLink's PowerProducer 3. This program lets you create your own DVDs, complete with DVD menus, submenus, and animations. You also can use PowerProducer 3 to edit video clips, retouch photos, add voiceovers, and incorporate transition effects. The software supports video imported from digital cameras, camcorders, VCRs, and DVDs. When you finish creating your movie, PowerProducer 3 supports burning DVDs, VCDs (Video CDs), SVCDs (Super VCDs), and even the new DVD+R9 double-layer discs (\$79.95; 510/668-0118; <http://www.gocyberlink.com>). ■

Corel Painter IX

Corel • \$429
Illustration software now includes new brush palettes, customizable shortcut keys, and other tools
 (800) 772-6735; (613) 728-8200
<http://www.corel.com>

JoyMouse 2.4

Virtual Projects • \$29.95
Use a joystick for normal mouse functions



CyberLink PowerProducer 3

info@vp-soft.com
<http://www.vp-soft.com>

Movies on CD & DVD 2005

MAGIX • \$39.99
Choose one of 12 templates and create your own DVD
 (888) 866-2449; (305) 695-6363
<http://www.magix.com>

PhatPad 2.0

PhatWare • \$29.95
Note-taking software for Windows Mobile-based Pocket PCs now has a customizable toolbar
 (650) 559-5600
<http://www.phatware.com>

PhotoStory on CD & DVD 2005

MAGIX • \$39.99
Turn your photos into musical slideshows on CD or DVD
 (888) 866-2449; (305) 695-6363
<http://www.magix.com>

PhotoWarp 2.5

EyeSee360 • \$249
Create panoramic videos compatible with QuickTime VR, iSeeMedia Zoom Viewer, and Helmut Dersch PTVViewer
info@eyesee360.com
<http://www.eyesee360.com>

TextAloud 2.0

NextUp Technologies • \$29.95
Listen to Word files, Web pages, and other files read aloud
sales@NextUp.com
<http://www.nextup.com>

Virtual PC for Mac 7 for Windows XP Home Edition

Microsoft • \$219
Run Windows and PC software on a Mac
 (800) 426-9400; (425) 882-8080
<http://www.mactopia.com>

WebTransporter 3.0

RealSofts • \$24.95
Download copies of Web pages for viewing offline later
support@realsofts.com
<http://www.realsofts.com>

Flashy Portability

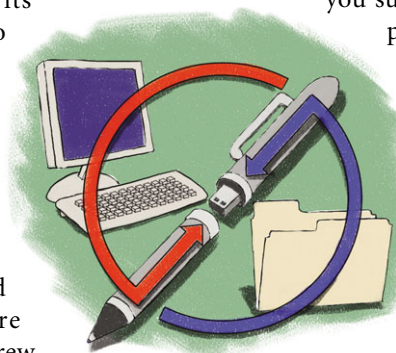
Portable USB (Universal Serial Bus) flash drives are phenomenally useful devices. They are reusable storage devices that can hold and/or transport all types of computer files.

If you are hooked on USB flash drives like I am, you will always want to have your portable drive readily available. Because we haven't become a paperless society yet, most of us also carry a pen or some other writing utensil. PNY Technologies, a company known for its flash drive products, has put these two useful objects together to create the Executive Attaché, a portable USB drive that looks and acts like a ball-point pen.

The Executive Attaché appears to be a regular pen. While it is slightly heavier and minimally thicker than most pens, at first glance you would never suspect that it is anything more than a writing device. Yet, if you unscrew the top part of the pen, a USB connector appears. The entire bottom portion of the pen is a USB hard drive that can be inserted into any USB port. The drive appears on your computer as a removable drive, so you can copy or drag and drop files to and from the drive very easily. Windows 98 requires the installation of drivers, but newer OSes (operating systems), including Windows Me, Windows XP, and Mac OS X, will recognize the drive as soon as you plug it into the computer.

This is a USB 2.0 device, and it's backward compatible with USB 1.1 ports. It is available in 128MB, 256MB, and 512MB sizes, so it can store numerous files, including music and photos. I use it for a quick backup when I am working on important documents. I also use it to store all my writing files so they are accessible from any computer, whether I'm at the office, at home, or on the road. Having the USB drive included with a pen means I only have to carry one thing instead of two.

The Executive Attaché fits into USB ports even if something is already plugged into an adjacent port. It must, however, be in the upper port because the pen's shirt clip sticks out slightly. Note to PNY: Why not make the shirt clip moveable so that it could fit in either port? Also, please put some type of rubber stopper on the bottom (pen) portion of the device. When the USB drive is plugged into the computer, the pen is still very useful, but it keeps rolling off my desk.



Make It Your Own

Because the Executive Attaché is a dual-purpose device, it alone would be an appropriate product for this TechMates column. This month, however, I'm going to tell you about a software product that will make the Executive Attaché or any other portable hard drive even more useful.

The P.I. Protector Mobility Suite makes it easy to synchronize files between a computer and a portable drive. It also lets you surf the Web and check email on public computers without leaving a trace of your activities.

P.I. Protector is a small utility that installs to the portable drive. There is some configuration involved. You must change the settings to give the software basic information such as which browser settings you want to update, which email program you are using, and which files you want to synchronize. The setup is intuitive, and a help file is available to answer any questions.

When you are at a friend's house or at any computer that has Internet Explorer installed, you simply plug in your portable drive and start Internet Explorer from the IE icon on the P.I. Protector's window. Every action you perform is recorded to the P.I. Protector program on your portable drive rather than the host computer, so your surfing leaves no traces on the computer you are using. Outlook and Outlook Express work in the same manner, leaving no email information on the computer you used.

If you use several different computers at home, work, or school, P.I. Protector will be a valuable friend. It lets you take all your IE settings, including your Favorites, History, and

cookies, from one PC to another. The program allows you to work directly from the portable device or copy your settings from the computer to the portable drive and vice versa. It also lets you synchronize files between the computer and the portable device. This feature works flawlessly, and I now use it every day.

In fact, the Executive Attaché and P.I. Protector have become my constant companions. I just love it when technology works well and is useful to boot! ■

BY SANDY BERGER

Sandy Berger is a nationally respected technology author and computing expert. Sandy's aim is to convey to others in easy-to-understand language what they need to know to take advantage of today's technology. Visit her at <http://www.compukiss.com> or email her at SandyB@smartcomputing.com.

PHILIPS



Experience...

Philips new Flat TV with Ambient Light Technology
will change the way you watch TV forever.

FEEL the deeper viewing experience.

EXPERIENCE the ultimate emotional impact.

ENJOY the perfect match with your interior.

DARE to push your experience to the extreme.



...FlatTV™ in a whole new light.



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Available at:



Don't Toss Your PC

Custom-Built PCs Let You Upgrade

Joshua Gulick

*Send your comments to
joshua@smartcomputing.com*

Many of my extended family members buy a new computer every two or three years. I'm always excited to see a sleek new Dell or HP system, but I cringe when my uncle-in-law tells me how much he paid for the new rig (and I cringe again when I hear that the old system now belongs to the local dump). He knows that he could probably salvage certain items that age slower than CPUs and memory (consider, for example, the perfectly good CD-RW [CD-rewriteable] drive that accompanied your last PC on its journey through your state's waste disposal system), but he thinks of the entire PC as a single unit. If the PC is slow and old, all of its components are equally worthless.

Not everyone has the know-how, time, or patience (lots of patience) to build a system, but you can build and upgrade your next PC without touching a screwdriver, thanks to local and national custom builders, such as Monarch Computer, that don't use any proprietary components. If you buy a computer from this kind of custom builder, your system will support a slew of existing and future components, which means you can upgrade pieces of your system as they get old.



Centira Sempron 3100+

\$1,299

Monarch Computer

(800) 611-0875

(770) 939-8886

DIY Or MMDI (Make Monarch Do It)

Monarch Computer's Centira Sempron 3100+ System is a great example of an inexpensive system that has excellent upgrade potential. The PC is available for \$739, but my review unit's extras (a mouse, keyboard, snazzy 17-inch flat-panel monitor, and speakers) bump the system to a still reasonable \$1,299. The system boasts the new Sempron processor, which replaces AMD's value Duron series; a large 120GB hard drive; 512MB of speedy PC-3200 memory; and a 128MB ATI Radeon graphics card.

These components won't break speed records, but they make up a solid system that can handle Web surfing, office tasks, casual gaming, and photo editing.

So what makes this such an upgradeable system? First of all, Monarch houses the PC in an Antec Sonata case. Although it has plenty of features, including several front-panel ports and a noise-reducing design, the case's most important feature is the motherboard area. It supports the popular ATX motherboard standard. As a result, when you need to upgrade the system to a new motherboard, you can carry your system into any local custom builder or hand it over to the family techie—anyone can easily find a motherboard that fits your case. Large PC manufacturers, on the other hand, often use small, cramped cases that don't support standard-sized motherboards.

Of course, you won't need to replace the motherboard any time soon. Although the system has an inexpensive Sempron processor, the motherboard supports any AMD 754-pin processors, including several of the more powerful AMD Athlon 64 processors. When you first upgrade the PC, you'll probably only replace the processor and the memory, not the entire PC.

Bang For The Buck

As with most Dell or HP systems, the Centira Sempron 3100+ system is quiet. You can put the PC in your living room or bedroom without irritating other family members. The system handles common office tasks without any trouble and accepts just about any type of media you throw at it. The media reader handles small memory devices (such as your digital camera's flash memory cards), and the DVD-RW/CD-RW reads and writes to both CDs and DVDs. The system isn't a heavy gaming machine, but casual players probably won't mind playing the latest games at low- or midquality settings.

You won't just save money when you buy an upgradeable system such as Monarch's PC—you'll save time. Chances are, your local builder can upgrade the PC without reinstalling Windows, which means you won't need to reload your favorite programs and files or transfer them from an old PC. ■

Get Closer To The Action

Kodak EasyShare DX7590 Digital Camera

Chad Denton

Send Chad your opinions at
chad@smartcomputing.com



EasyShare DX7590

\$499.95

Kodak

(800) 235-6325

<http://www.kodak.com>

I believe the word “vacation” may be the sweetest in the English language. I feel obliged to thoroughly document my explorations by taking enough photographs to make family and friends dread my return.

Kodak was kind enough to send its new 5MP (megapixel) EasyShare DX7590 digital camera in time for a vacation with my fiancée to San Francisco and the California coast. The DX7590 includes a 10X optical zoom (plus a 3X digital zoom) that lets you get close to the action without sacrificing image quality.

The DX7590 includes 32MB of internal memory, enough to store approximately 17 images at 5MP using standard compression. Due to the internal memory, Kodak didn’t include an SD (Secure Digital) card with the camera, but I picked up a 256MB card for the vacation that could accommodate more than 170 pictures at 5MP using standard compression.

Zoom & Burst

Measuring 3.2 inches high x 3.9 inches wide x 3.2 inches deep, the DX7590 isn’t pocketable, but it’s not too bulky to comfortably carry. During treks through San Francisco, I was able to stash the it in a backpack.

My fiancée got us tickets to a 49ers game that provided an excellent test for the camera’s two burst modes and its zoom function. First Burst takes up to five pictures at about two pictures a second. Last Burst takes pictures at roughly the same rate for as long as 15 seconds and saves the last four frames after you release the shutter button. Using the burst modes with the zoom allowed us both to capture some great action shots.

Novice Settings

Like most digital cameras, the DX7590 includes several automatic modes. In San

Francisco, I used the camera’s Automatic mode more than the other modes but found myself using Landscape mode when snapping pictures along the Pacific Coast Highway. A Portrait mode also came in handy when strangers snapped our picture for us at various tourist traps along the way. The Sports mode gave us sharp action shots at the 49ers game until the sun went down and the pictures started getting too dark.

The camera includes P, S, A, and M modes that let more experienced users fine-tune camera settings. P mode lets you make basic adjustments, including exposure compensation and ISO (International Organization for Standardization) settings. S mode gives priority to the shutter speed and automatically adjusts aperture settings for proper exposure, while A mode lets you adjust the aperture and automatically adjusts the shutter speed. M mode provides complete manual control.

A Scene mode includes settings for a variety of environments. A Museum mode disables the flash and mutes the sound coming from the camera. A video mode allows you to capture video at 640 x 480 (12fps [frames per second]) or 320 x 240 (20fps).

EVF & Battery

Kodak decided to use an EVF (electronic view finder) on the DX7590. The EVF is a LCD (liquid-crystal display) that replaces an optical viewfinder. The EVF makes it easy to accurately compose pictures because it shows you exactly what the lens sees. However, the EVF is difficult to see in direct sunlight.

The battery stood up to my use. I recharged the battery each evening, but I took more than 150 pictures most days and, in some instances, more than 300 images. Most images were outside or from a distance, so I rarely used the flash. The camera didn’t include a battery meter. A warning appears when battery power starts getting low, but you have no idea how much power you have left until you’re almost out. I did get a low-battery warning—by the time I noticed it, I had enough power for one or two images.

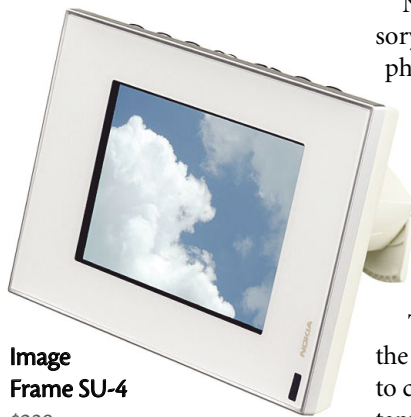
Despite minor complaints, I hated sending the DX7590 back. The 10X optical zoom more than makes up for a couple of minor complaints. ■

The Frame Game

Two Radically Different Digital Frames

Kylee Dickey

Send your comments to
kylee@smartcomputing.com



**Image
Frame SU-4**

\$239
Nokia
(888) 665-4228
<http://www.nokia.com>



**14-inch Wallflower2
Standard Edition**

\$899 (prices vary by model)
Wallflower Systems
(408) 924-0860
<http://www.wallflower-systems.com>

Many of us with digital cameras take more photos now than we did when we paid for film and developing. But I find that I print, frame, and display fewer photos. An emerging line of digital picture frames provides a way to display digital photos.

From Phone To Frame

Nokia's Image Frame SU-4 is an accessory for IR (infrared)-enabled camera phones. Therefore, it has no memory card slot or USB (Universal Serial Bus) port. Instead, the frame's IR port receives images. Although all IR-enabled phones, cameras, and computers should work with the Image Frame, Nokia only guarantees compatibility with its own camera phones.

To transfer images from a Nokia 3600 to the Image Frame, I used the phone's menu to choose Send Via Infrared. It was important to hold the phone at the proper angle while sending the image. If I tilted the phone too far, the transmission failed. Otherwise, sending photos to the frame was simple.

The Image Frame's 5.1-inch, 320- x 240-pixel LCD (liquid-crystal display) displays just 4,096 colors, so images look right only if you position the frame at a specific angle. Of course, the Image Frame was designed for low-res camera phone photos, so a higher-quality LCD would have been a waste.

The Wallflower's Turn To Dance

The 14-inch Wallflower2 Cherry Standard Edition frame contrasts with Nokia's Image Frame in price and quality. A 12-inch model is also available, as are white plumeria and black cherry finishes. The Wallflower has a portrait-worthy wooden frame, which surrounds its 14.1-inch, 1,024- x 768-pixel LCD. The Wallflower displays over 4,000 times as many colors (16.7 million) as the Nokia Image Frame. As a result, my favorite digital images looked stunning on the Wallflower.

The only thing that detracts from the frame's appearance is the power cord. For this reason, I didn't hang the frame on the wall but instead used the bundled feet to mount the frame on a table.

Setup is simple, and the frame's documentation is straightforward. The Standard Edition includes a Wi-Fi adapter, as well as Ethernet and USB ports for transferring photos over a network or with a USB card reader. The Value Edition lacks only the Wi-Fi adapter. I temporarily disabled my router's filters so that the Wallflower could join my network. The Wallflower runs Linux 2.4. Upon startup, you'll see a boot screen, then a white startup screen, and finally a screen with system information, including the Wallflower's assigned IP (Internet Protocol) address. I used this IP address to configure my router to allow the Wallflower on my network. WEP (Wired Equivalent Privacy) encryption is even supported.

The frame includes a built-in Web server, so you can enter the Wallflower's IP address into the Address field of your browser to access Web-based configuration utilities. The Web server's interface is user-friendly and intuitive.

You can access the Wallflower through Windows' Network Neighborhood. Simply drag images from your hard drive to the Wallflower's Images folder. A full 30GB of the Wallflower's 40GB hard drive is available for image storage. Not only can the Wallflower play photo slideshows, but it can also play MPEG-1 videos, as well as MP3 and WAV files (through its built-in audio-out ports). Finally, you can even email photos to your Wallflower. Read about the nifty email feature at <http://www.wallflower-systems.com/products/pollinate.htm>.

If Money Were No Obstacle

The Wallflower is a beautifully crafted frame, and I'd love to have my own. However, writers can't afford to spend \$900 on a picture frame, even one as well-designed as the Wallflower. I could afford Nokia's Image Frame, but it doesn't offer the display quality or connectivity options I desire. Until I see either a salary increase or a Wallflower price drop, I'll continue to print frame-worthy photos using my inkjet printer. ■

The Stink Over Ink

Cartridge Refill Systems Are Only Getting Better

Nathan Chandler

*Send insights and insults
to Nathan at
nathan@smartcomputing.com*

For years, enterprising companies promised savings through the use of inkjet cartridge refill kits. The concept was deceptively simple. A cartridge runs dry, so you inject fresh ink into the dry tank and print hundreds of pages, all without spending hundreds of dollars for the manufacturer's ink.

If you've tried these kits, you probably came face to face with two hard realities. For one, the ink quality might not have lived up to your expectations. And two, you probably found out the hard way just how messy those kits can be. The Inke Inkjet Auto Refill System is a product that promises to eliminate at least one of those unpleasant ink experiences.



It's Come To This

That the Inke system even exists raises a common question. Why, after all these years, are consumers still trying to do an end-around on manufacturers' genuine inks and cartridges? The answer is obvious. Those cartridges sometimes cost one arm, two legs,

and then some. Consider the numbers.

HP's four-color, two-cartridge Deskjet 3845 sells for \$79.99; its cartridges cost about \$40 combined. Canon's \$89 i560 uses four individual ink cartridges, a system that the company claims "can" save you money in the long run, but it's still \$50 to buy all four cartridges at once. Then there's Epson. To be sure, the \$99 Stylus Photo R200 creates wonderful photos and uses six individual ink cartridges, but those tanks together cost you nearly \$80, far more than half the price of the printer. When was the last time it cost you 10 grand to fuel your \$20,000 car?

To work around ink expenses, you can choose a printer that uses the cheapest cartridges, print fewer pages, use ink conservation software such as InkSaver (\$34.99;

<http://www.inksaver.com>), or refill your cartridges with affordable third-party inks. Not only are the indelible inks horribly messy, but certain kits make it easy to ruin a cartridge and possibly your printer.

The automated Inke system reduces those problems to afterthoughts. To refill a tank, you slip your empty cartridge into one slot, put a tank of the company's third-party ink in the other, and press a button, and two minutes later, the cartridge is ready to go again. It's really that easy, and the one-page, fold-out instruction sheet says you should expect between five and eight refills before a cartridge stops working.

This kit includes three black tanks to help you get started, and replacements cost about \$8 each, less than a third of the cost of an original HP cartridge. The Inke's biggest drawbacks are that it currently works only with specific HP cartridges and that it refills only black tanks. However, the company plans to expand its product offerings soon.

What Goes Around

Inkjet manufacturers say third-party inks don't work as well, citing differences in color quality, longevity, and even print speeds. These claims are at least partly true because photos created with third-party inks generally don't look as good as those created with original printer inks. On the other hand, third-party inks work fine for text documents and basic graphics.

The Inke system proves that refill kits are getting better by the day. It seems certain that no matter what inkjet manufacturers do to try to stop it, the inks will improve, too. When that happens, few consumers will continue fueling a consumables cash cow that makes up the bulk of some printer companies' profits.

Inkjet makers will continue reaping their slowly but surely diminishing profits, perhaps deservedly so. But PC users with restricted technology budgets, paired with the increasing number of alternative products, ultimately will prove which printer goods users perceive as a fair trade for their hard-earned dollars. Judging from the feedback I've received, I think those consumers are already beginning to have their say. ■

Inke Inkjet Auto Refill System

\$79.95

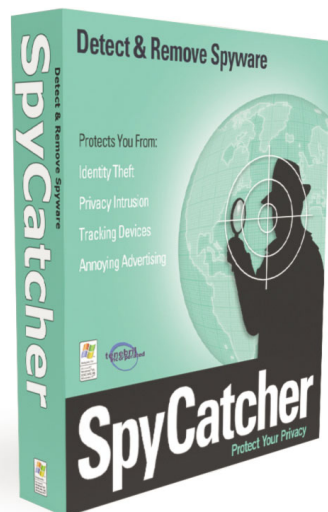
Inke

(818) 709-0250

<http://www.inkeusa.com>

I Spy A Spy On The Prowl

Protect Your PC With Anti-spyware



January 2005
Smart Choice
SpyCatcher 3.0

You use antivirus software, you diligently filter out spam, and you restrict access to questionable Web sites. So you think your PC is safe, right? Yeah. So did most home computer users in the largest-to-date study conducted by the NCSA (National Cyber Security Alliance) and AOL (America Online). But even though more than three-quarters of the study participants thought their PCs were safe or very safe, experts who visited their homes discovered that 80% of the participants' PCs were infected with spyware.

Spyware, which is typically installed without your permission and/or knowledge, makes use of your computer's Internet connection to surreptitiously monitor your online activity and gather information about you that it can transmit back to its originator. Although this behavior is bad enough, spyware also can affect your computer's performance by displaying a plethora of targeted pop-up ads (accomplished by a form of spyware often referred to as **ad-ware**), changing your browser's home page, and slowing down your PC or otherwise inhibiting your computing. And installing antivirus programs and

firewalls is no guarantee your computer will be safe from spyware.

But you can do something about the spyware scourge. Anti-spyware products identify and quarantine or destroy these unwelcome invaders, and there are numerous effective and affordable programs out there today. To help you choose, here's a look at four popular anti-spyware products.

How We Tested

We narrowed a list of more than a dozen programs to those geared toward the home, home office, or small business. We ran full system scans at least twice for each program and also tested each one's periodical maintenance scanning features. We considered many criteria in evaluating each app, including ease of installation, ease of use, range of features, and overall effectiveness. But because each program measures its results in varying ways—for instance, one may count five separate files as one piece of spyware, whereas another may count it as five apps—instead of relying on a program's reported results, we judged effectiveness

by manually comparing catalogued and quarantined files, measuring unwanted pop-up occurrences after installation, and scrutinizing other features.

Ad-aware SE Personal

Don't let the name fool you. Along with routing out adware, Ad-aware SE Personal combats the more offensive category of spyware, as well. This free program is one of the most popular anti-spyware products worldwide, and we suspect that it's because Ad-aware works both quickly and well. It scans your hard drive for spyware and lets you place those items in a quarantine folder where they are isolated from the rest of your system.

Ad-aware SE Personal

Free (\$26.95 SE Plus version, \$39.95 SE Professional version)
 Lavasoft
general@lavasoft.de
<http://www.lavasoftusa.com>

Scorecard

Performance	4
Ease Of Use	4
Installation	5
Documentation	4
Price	5
Overall Score	4.4/5

Setting up the software is a simple and fast process. Download the 2.5MB app—the smallest of the four we tested for this article—from the Web site and you'll be able to install the program within a minute. Then, click the Scan Now button on the left to display four scanning options: Smart System scan, used for daily maintenance; Full System scan, the most in-depth scanning option; Custom Scanning, to select drives and folders; and Scan Volume For ADS, for scanning Alternate Data Streams. Unless you're an expert PC user, you won't need to concern yourself with the latter choice.

The first time you use the software, the Full System scan is the way to go. Depending on the computer we used, it took us between 10 and 22 minutes

to run the full scan, and when Ad-aware finished, we saw a neatly cataloged list of critical objects. You can click items for more information and then decide whether to quarantine, delete, or ignore the objects.

Computer novices might find the program a bit tricky to understand, as much of it is displayed in “geek speak.” For instance, when you open the quarantine log, you’ll see the paths of the objects on your hard drive, but it might be difficult to understand just what these objects are or what they do. We also would have liked to have seen some automated processes; instead,



you must conduct scans manually in Ad-aware SE Personal. Even so, as a free product, Ad-aware is a true bargain. For real-time protection and more advanced features, you can upgrade to one of the for-a-fee versions.

Spybot Search & Destroy 1.3

One of the symptoms of a spyware-infected computer is that it slows down considerably. If you’re frustrated with a slow system and want immediate help, we recommend Spybot Search & Destroy 1.3. Not only does the free program download and install in just a



couple of minutes, the full system scans also took about five minutes on our 80GB hard drive, which is significantly less time than that of the other apps we tested. According to the creator, Spybot S&D performs its scan so quickly because instead of searching the complete Registry and hard drives first, the program “takes advantage of the fact that all spies have to anchor themselves at a few places over the system to get active.” Once the software identifies these locations, it gathers information and looks deeper into your system.

Downloading and installing Spybot S&D also is easy. A wizard walks you through a few simple installation pages, and you’re then ready to run a system scan. Click the no-frills interface’s Search & Destroy icon, and in a few minutes, you’ll see a list of questionable items. This user-friendly, color-coded list displays spyware in red and other items you should watch in green, the latter of which are typically innocuous “usage tracks” (which you may want to clean if you share your PC and don’t want other users to see where you’ve been surfing). With spyware, you usually can click each item’s listing to discover the name of the company, the type of item it is (for example, a cookie), the company URL (uniform resource locator), Spybot S&D’s description, and an excerpt from the company’s privacy statement. This information can be vital in helping you decide whether to disable the items.

If you do click the Fix Problems button, Spybot S&D creates a system restore point before scrubbing the files. That way, if you realize you mistakenly deleted a necessary file, the restore point will let you return your system to its previous configuration. Other

user-friendly features include the ability to block your computer from downloading some types of spyware, a detailed tutorial, and an advanced mode for users who want more control and customization options.

SpyCatcher 3.0

As you know, part of the problem with spyware is that it usually infects your system without your knowledge. If you’d like your anti-spyware to work almost as secretly, be sure to check out SpyCatcher 3.0. Several of its features, including a reinstallation shield and the Protector monitoring feature, work automatically behind the scenes.

SpyCatcher 3.0

\$29.95 (plus \$9.95 unlimited support for all Tenebril products)

Tenebril

(800) 790-9060

<http://www.tenebril.com/products>

Scorecard

Performance	5
Ease Of Use	5
Installation	5
Documentation	4.5
Price	4.5
Overall Score	4.8/5

Initially, SpyCatcher works similarly to the other programs we tested for this article. After installation, the first thing you’ll see is the Sweep Spyware dialog box. The checkboxes let you select which parts of your PC you’d like to scan, such as the memory, Registry, and all hard drives or selected folders and files. Then, you simply click Go, and within 10 to 12 minutes, SpyCatcher returns a list of Found Spyware, many of which contain links to online articles describing the spyware. You can choose to allow or disable as many or as few of the items as you wish.

What makes SpyCatcher stand out from similar programs are several notable extra features. One is Protector, which lets you select options that will watch your computer’s memory for running spyware and protect your

Spybot Search & Destroy 1.3

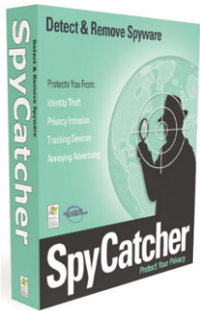
Free

Patrick M. Kolla

<http://www.spybot.info/en>

Scorecard

Performance	4
Ease Of Use	4
Installation	5
Documentation	4
Price	5
Overall Score	4.4/5



browser's home page and search page from being hijacked. Another is Reinstall Shield, which overwrites a deleted spyware app so it can't run and keeps it from reinstalling itself. A

third feature is the Scheduler, whereby you configure the software to run sweeps automatically. And, instead of having to press a button for these features to work, you aren't required to do anything more than open the software after you boot up your PC.

We also were impressed by the interface. The clean look, easy-to-understand language, and numerous buttons on the left make it a cinch to configure and use the software. Because you must pay \$29.95 for this product, the one feature we'd like to see added is free phone support. As it stands, you must pay \$9.95 for unlimited support, but that price covers all Tenebril products.

Spy Sweeper 3.2

Spy Sweeper offers both comprehensive spyware detection and removal, as well as a variety of tools that keep your PC from becoming reinfected. Using the program is straightforward. After downloading and installing Spy Sweeper, you're initially prompted to run a full sweep of your computer, including the Registry, memory areas, and files and folders. You aren't required to conduct a full sweep of your entire system, however; Spy Sweeper's options include the ability to skip files larger than a size you determine, to sweep only known spyware folders, and to sweep all user accounts, even those related to another user or login ID on your PC. You also can set up Spy Sweeper to run scheduled scans, such as on a specific day at a specific time or an hour after you turn on your PC.

Spy Sweeper offers a commendable variety of shields. These prevent spyware from

redirecting Web searches, hijacking the browser's home page, altering Internet Explorer's Favorites list, diverting you from desired sites to undesired ones, adding programs to your Start menu without your approval, and creating phony pop-ups in Windows Messenger, among other things. Other notable features include an automatic update check, detailed spyware detection logs, and telephone technical support.

Spy Sweeper 3.2

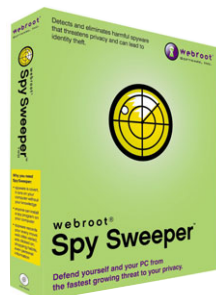
\$29.95 (one-year subscription fee)
Webroot Software
(800) 772-9383; (303) 442-3813
<http://www.webroot.com/products>

Scorecard

Performance	4.5
Ease Of Use	5
Installation	5
Documentation	4.5
Price	4
Overall Score	4.6/5

In addition, the Webroot Software site features Spy Audit. If you aren't convinced your system is hosting spyware, we recommend that you run this free online check. Odds are good that Spy Audit will find at least a handful of (and likely many more) spyware items, which you then can disable with a trial version of Spy Sweeper.

We found two small drawbacks to using the software: the amount of time it took to run a full scan and the pricing scheme. It took 53 minutes for the first full scan, but the second scan of just the memory items was significantly shorter at 28 minutes. Also, you must pay a yearly subscription fee to ensure your copy of Spy Sweeper stays current.



Our Smart Choice

Recently, the FTC (Federal Trade Commission) filed its first federal case concerning spyware, and the House of Representatives approved two bills to

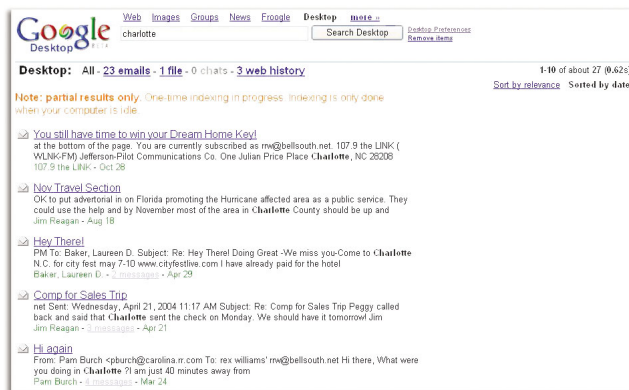
increase criminal penalties and fines for those who infect your PC with spyware. But until legislation bares sharper teeth, you need to rely on anti-spyware. We enthusiastically recommend all of the programs we reviewed, including Ad-aware SE Personal for its free performance, Spybot S&D for its speed and simplicity, and Spy Sweeper for its comprehensiveness and ease of use. But overall, we preferred SpyCatcher for its outstanding array of features in a user-friendly package, and that's why we award it our Smart Choice award. **II**

BY HEIDI V. ANDERSON

BUYING TIPS

- **Know what you're paying for.** Anti-spyware products offer a range of features, and this variety is reflected in the pricing schemes, as well. Some software developers offer free technical support, whereas others charge additional fees. Some developers offer unlimited coverage, whereas others charge for yearly subscriptions. Know what you're paying for and be sure to factor in additional costs.
- **Test its interaction with other anti-spyware.** One recommendation we here at *Smart Computing* often make is that you consider purchasing a full-featured anti-spyware product and run a freeware program to clean up any spyware the first app may have missed. Some anti-spyware products don't work well with other anti-spyware, however, so if possible, test out the demo versions beforehand.
- **Consider your Internet software.** True, most surfers use Internet Explorer, but Microsoft's browser isn't your only option. Opera, Netscape, and Mozilla are viable alternatives, but various anti-spyware products have different capabilities when paired with less popular browsers. In fact, some anti-spyware products require you to use newer editions of IE. Check the system requirements of anti-spyware before installation or you may not be detecting everything you think you are.

Ultimate Search Utility



Imagine this: A few years ago, you found some important information on the Web and thought you copied it to a file on your computer. Now you cannot find it. You return to the Internet, hoping to locate it. You enter some related keywords from the article into Google and press ENTER. Lo and behold, not only does the original Web site containing the article pop up as a result, but so do entries relating to files on your PC, including a link to the instant message where you sent the article to a friend.

A few years ago, this scenario was only a dream in the minds of researchers and harried PC users with too much information on their hard drives. Thanks to the new Google Desktop Search utility, this dream is reality. With Google Desktop Search, you download and install a small (400KB) file and set a few preferences. Afterward, Google Desktop Search automatically indexes the contents of your hard drive, including

Outlook or Outlook Express emails, AOL instant messages and chats, and viewed Web sites in your cache. From that point on, it monitors your activity and indexes your files.

When you perform a standard search in Google, the utility returns the results of any matching, indexed files, plus results from the Web. If you click the Desktop link on the main Google search page, you will have the option of searching only your PC or your PC plus the Web. (You can also access Google Desktop Search via the icon placed on your Desktop during installation.) Using the Desktop option offers the added advantage of letting you sort your results by document type such as email, file, or viewed Web page.

The app is easy to install and use, but if you have questions, locating the Help Center can be a tad difficult. In addition, because this is an integrated utility, there is no standard Help tool. If you need help with

Google Desktop Search, head to <http://desktop.google.com/support> for a lengthy list of FAQs or try your luck in Google Groups (groups.google.com).

Google Desktop Search has a few additional limitations. It doesn't work with third-party email clients such as Foxmail or Netscape Mail, nor does it support any IM (instant messaging) or chat clients other than AOL. It cannot search network drives (although it does index and can identify files from another computer if you previously opened them on your PC), and it cannot index or perform searches on Windows 9x computers. (It supports Windows 2000/XP only.) Additionally, it cannot return results for partial word searches (such as the word "meeting" if the name of the document is `mondaymeeting.doc`). Finally, at present, Google Desktop Search can process only Outlook (2000 or newer), Outlook Express (version 5 or newer), AOL, Internet Explorer, Word, Excel, PowerPoint, and plain-text files. Nevertheless, those capabilities alone are pretty darned impressive.

The utility's initial indexing task (performed after installation) can take quite awhile on a large hard drive. However, the utility performs its task in the background, snatching bits of time whenever the computer is idle for even a few seconds. In our tests, it managed to index nearly 6,000 items in the first two hours, even though

someone was using the computer almost constantly.

If this sounds a bit like Big Brother, don't be alarmed. Google's Privacy Policy states it does not collect any personal information. All index results and files are stored on your computer rather than Google's servers. To be extra safe, if you have particularly sensitive data stored on your PC, you can tell Google not to index or search the files where it resides. With your permission, Google will collect nonpersonally identifiable information (data on searches, search times, and crashes) to improve its product, but you can opt out of this process, as well.

Google Desktop Search is currently in beta, and company representatives say they are considering expanding the range of file types and programs it supports. In the meantime, it is an awesome addition to your search arsenal and one worth downloading and trying out. ■

BY JENNIFER FARWELL

Google Desktop Search

Free
Google
(650) 623-4000
<http://desktop.google.com>

Scorecard

Performance	4
Ease Of Use	5
Installation	5
Documentation	4
Price	5
Overall	4.6/5

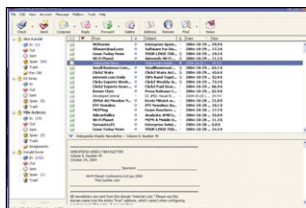
The Killer Email App



Does the lack of features in Outlook Express or the lumbering pace of Outlook frustrate you? If so, Foxmail is a reasonable, free alternative. The product is nearly as powerful as Outlook, offering two types of customizable spam filtering, robust security protection (delete email at the server level, account-level password protection, and optional message encryption), and support for both multiple email accounts and

complex rules. Also, Foxmail lets you search email folders based on various criteria, organize your messages, and perform other standard tasks.

Foxmail also has some nice extras, such as support for Hotmail and MSN mail (send and retrieve) and Yahoo! Mail (retrieve only), and support for multiple mail servers under a single email account. Additionally, it sets up each email account with its own set of folders



(In, Sent, Out, etc.), which eliminates the need for users with multiple email addresses to create rules to separate each address's messages. This feature is very handy for multiple-person—and email account—households.

Foxmail has a few quirks. Its text-wrap feature does not function well, it has a hard time recognizing and auto-inserting addresses from the address book when you are sending to more than one sender, and it does not have a whitelist (accepted senders list) feature, even though it has a blacklist option. It can also take quite awhile to train the spam feature to filter mail effectively. These are minor shortcomings, however, that

do not detract from Foxmail's appealing characteristics. The developer is in China, so support is nonexistent. But the program is easy-to-use and its Help feature is useful. **II**

BY JENNIFER FARWELL

Foxmail 5

Free
BODA
lhying@bodaworld.com
<http://fox.foxmail.com.cn/english.htm>

Scorecard

Performance	4
Ease Of Use	4
Installation	5
Documentation	3
Price	5
Overall	4.2/5

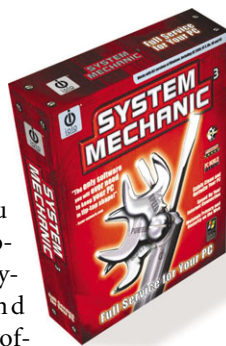
Tune It Up

For many users, the news these days is dire, with warnings that we should buy pop-up blockers, spyware detection and removal programs, system performance tweakers, specialized defragmentation tools, and other optimization and maintenance utilities to keep our PCs running smoothly and securely. For those overwhelmed by the thought of purchasing and learning to use half a dozen utilities, System Mechanic presents an affordable, workable solution.

System Mechanic is easy to use, too. Click a task icon under one of the five categories—Clean, Fix, Maintain, Optimize, and

Protect—and System Mechanic will walk you through the process with an easy-to-comprehend wizard. It even offers a specialized PC Maintenance Wizard that runs several of System Mechanic's most commonly used tools in sequence. (You can disable the ones you do not want to run.)

From cleaning up your outdated Registry entries (a common source of system crashes and slowdowns) and eliminating superfluous files to eradicating spyware and optimizing your hard drives, System Mechanic is as comprehen-



sive a utility as you will find anywhere. It can even perform such tasks as recovering deleted files

(in some cases) and moving software to a different drive or partition. For a few more dollars (\$39.95 for the upgrade; \$69.95 to purchase outright), you can step up to System Mechanic Professional, which also incorporates virus, Trojan, and worm protection.

Like many multiple component products, some of System Mechanic's elements are not as feature-rich as their top standalone competitors. Nevertheless, its design is well-conceived and efficient, and it makes

short work of many cumbersome PC maintenance tasks. Best of all, the components work well with each other, reducing the potential for software conflicts that sometime arise with unrelated standalone products. **II**

BY JENNIFER FARWELL

System Mechanic 5

\$49.95 after free 30-day trial
iolo technologies
(877) 239-4656
<http://www.iolo.com>

Scorecard

Performance	5
Ease Of Use	5
Installation	5
Documentation	4
Price	5
Overall	4.8/5

IMPULSE ITEMS

Compiled by Joshua Gulick

Cool Stuff For Less Than \$20

See it, like it, buy it. Impulse Items are products that quicken your pulse and capture your attention but won't make you dig too deep into your wallet. Check these pages each month for the latest interesting and inexpensive computing items we've run across.



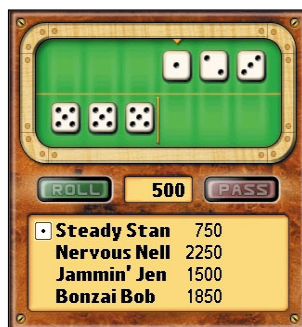
BEE ICONS

We half expected to see a Desktop full of digital bees when we installed ArcticLine Software's Bee Icons (<http://www.beeicons.com>), but as it turns out, the icon manager program doesn't include a single bee icon. Instead, the software lets you choose an icon theme (a group of icons that generally include My Desktop, hard drive, and folder icons) and quickly assign the new icons to their appropriate categories throughout your system. Once you buy the Bee Icons theme manager (\$19.95), you can download and install any of the Web site's dozens of free user-submitted icon themes, which include some great holiday themes.



MOPPETS

If your office doesn't allow pets (we can't imagine why), treat your favorite officemate to the next best thing: Moppets (<http://www.cyberguys.com>). When the furry Moppets aren't perching on your monitor, they clean. Moppets won't reorganize your desk (at least, our review Moppet didn't), but their microfiber stomachs make a perfect monitor chamois. Just grab your moppet and wipe the dust off your screen; you won't need any cleaning liquids. Cyberguys! offers Bear, Kangaroo, and Skunk Moppets for \$4.99 and Softbellies, which have poems, birthdates, and neat names (we're particularly fond of the Quantum Leap Frog), for \$8.95.



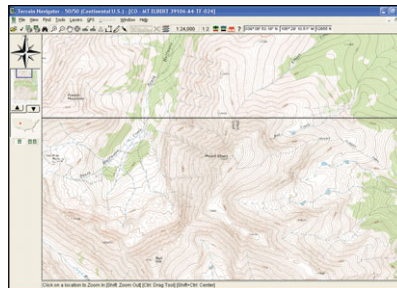
FARKLE

If you've seen PDA (personal digital assistant) video games lately, you've probably noticed that many have intense graphics, plenty of action, and complicated rules. If you're not interested in a helicopter-combat-mission-simulator, try Smart Box Design's Farkle (<http://www.smartboxdesign.com>), a colorful, Palm OS (operating system)-based game that uses six virtual dice. Roll pairs and other combinations to rack up points against virtual opponents, who will try to breach 10,000 points before you. Download Farkle for \$14.95.



PixiFUN PHOTO STICKER ALBUM

Grab some digital pictures and a few of Pexagon's PixiFun Photo Sticker Album kits (<http://www.pixifun.com/pixifun>) before you entertain the kids or grandkids. Thanks to the included software, you can easily import your digital photos to the sticker templates and then spice them up with the program's extra images, such as patterns, colorful hats, and sunglasses. You can also add text shapes, including squares, circles, and stars. Once you've completed the digital stickers, simply print them onto the kit's 60 precut stickers and then place them in the included hard-cover photo album (which holds up to 22 photo stickers). The PixiFun Photo Sticker Album kit is available for \$12.99.



TERRAIN NAVIGATOR

We don't blame you if you don't spend your vacations scaling the highest mountains in the United States; after all, there's no broadband up there. But those who occasionally leave their computers behind to conquer their state's peaks will love Maptech's Terrain Navigator 50/50 (<http://www.maptech.com>). The software offers detailed topographic maps of each state's highest peaks. If you don't like to stare at a flat map, you can switch to a breathtaking 3D view and then view the map from the perspective of a car (ground level), helicopter, or plane. Buy Terrain Navigator 50/50 for \$9.95.



USB CUP WARMER

Who knew that the humble USB (Universal Serial Bus) port would spark a torrent of mostly useless USB-powered gadgets? Of course, not all of the gadgets waste a perfectly good port; a select few are genuinely useful, such as the USB Cup Warmer (<http://www.thinkgeek.com>). Not surprisingly, the warmer wraps around your cup and produces just enough heat to prevent your hot chocolate from cooling off for about half an hour. And thanks to a special hole, you can slip the warmer over your mug's handle and then hold the mug without warming your fingers. Although klutzes may have trouble wielding a corded mug, most geeks will love this unusual device. Invest in your hot chocolate's lifespan for \$12.99.

SMART GLOVE

If you've pounded your keyboard for as long as we have, you probably keep an eye out for ergonomic tools that give your wrists a rest. So do we, so we were glad to see that IMAK (<http://www.imakproducts.com>), which also makes keyboard and mouse rests, offers a glove that supports sensitive wrists. You can buy a right- or left-handed Smart Glove for \$19.99. Be sure to check the site's Smart Glove Measuring Guide, which helps you choose from five sizes.





Windows XP

Download & Install Windows XP Service Pack 2

Available since August 2004, Windows XP SP2 (Service Pack 2) adds features and patches that help you protect your data and privacy. Among the features are a built-in pop-up blocker for Internet Explorer, a more customizable firewall that's turned on by default, and more flexible attachment blocking for Outlook Express. It also incorporates every security patch or update previously offered through Windows Update.

This article steps you through downloading, installing, and configuring SP2. But if you don't have a high-speed (DSL [Digital Subscriber Line] or cable) Internet connection, you'll probably want to order this free 75MB service pack on CD. To do so, visit http://www.microsoft.com/windowsxp/downloads/updates/sp2/cdorder/en_us/default.mspx.

Prepare, Download & Install

Before you install SP2, Microsoft recommends three things. First, back up your critical data, meaning important document files. Second, use a

if you've installed the latest Windows Update software. If you haven't, click Install or Yes.

Click Express Install. Windows Update will scan your system and, in a minute or so, list Windows XP SP2 as a High Priority Update. Click Install. When the End User License Agreement dialog box appears, click I Accept. A wizard prompts you to back up your system (which you should have already done) and close all open programs (also already done—but don't attempt to close the browser window open to Windows Update). Click Next.

SP2 took 45 minutes to download and install on our 750MHz Pentium III over a cable Internet connection. We weren't prompted at any time during any of the several test installations we ran, but you might be, and Microsoft asks that you be present during the installation.

When the installation finishes, click Restart to restart Windows and complete the installation. You may notice that the name of your Windows XP edition—Home or Professional—is missing from the opening screen graphic, but don't let that scare you. Next you'll see a blue screen, asking you to wait, followed by a reduced Windows opening screen, followed by a screen telling you to Help Protect Your PC by enabling Automatic Updates. Click Not Right Now and Next. Your Welcome screen appears and then the logon screen (if you use one) and then your Desktop.

Set Up The Security Center

Shortly after your Desktop appears, you'll see the new Security Center, where you can control settings for the firewall, antivirus program, and Automatic Update feature. How you set this depends on your preferences, but here are some guidelines.

Firewall. Unlike the original Windows XP ICF (Internet Connection Firewall), SP2's new firewall is turned on by default and lets you create exceptions for programs that need to send or receive data through the firewall. (It also automatically creates some exceptions, such as for wireless networking software, at installation.) Stick with the default settings; create exceptions for any programs that can't access the Web the way they did before you installed SP2.

The Firewall and Virus Protection features are turned on in the SP2 Security Center. Automatic Update indicates Check Settings because it's set to notify the user of updates but not to automatically install them.



program such as Spybot Search & Destroy (<http://www.safer-networking.org>) to remove any spyware that might be lurking on your system. Third, check your PC manufacturer's Web site for any special instructions for installing SP2.

These preparations made, close any open apps. Click Start and choose All Programs and Windows Update. IE will open to the Windows Update home page, which will begin scanning your system to see



Windows XP

Automatic Updates. Microsoft wants you to turn on Automatic Updates so your PC can download and install WinXP updates as it makes them available. But given the havoc caused by some previous updates, we recommend you set the Security Center to tell you when updates are available, so you can review them and decide for yourself. Under Manage Security Settings For, click Automatic Updates. In the dialog box that appears, choose Notify Me But Don't Automatically Download And Install Them and click OK. Whenever an update is available, a message will pop up on your Taskbar.

Virus protection. SP2 monitors your antivirus program to make sure you have one installed, loaded, working, and up-to-date. Leave this as it is. If you don't have an antivirus program, get one.

Close the Security Center. If you need to open it again, click Start, choose Control Panel, and double-click the Security Center icon.

Tweak The Pop-Up Blocker

Launch IE and choose Tools and Internet Options. Click the Privacy tab; in the new Pop-Up Blocker section, you'll see the Block Pop-Ups option selected, which is the default. Click Settings. Under Notifications And Filter Level, note that the Filter Level is set by default to Medium, which in our tests hasn't let a single pop-up through.

This is the good news. The bad news is the Information Bar, which is vexing where pop-ups are concerned. When IE encounters and blocks a pop-up, the Information Bar appears and tells you so. It also tells you To See This Pop-Up Or Additional Options Click Here . . . , but we've not been able to find any way to display the blocked pop-up. If you click the Information Bar and choose Temporarily Allow Pop-ups, there is no way to disallow them again without relaunching IE. You're probably better off unchecking Show Information Bar When A Pop-Up Is Blocked. Click Close and then OK.

The Information Bar works more smoothly with SP2's download-blocking feature, designed to prevent Web sites from sending you harmful or malicious files. When a Web site tries to send you a file, the Information Bar appears. Click it and choose Download File; read the information in the box that appears before deciding to download the file.

Outlook Express Features

SP2's updated attachment blocking for Outlook Express doesn't improve protection against potentially viral attachments so much as it makes

that protection easier to live with. With the attachment blocker turned on, Outlook Express will continue to block executable attachments known to carry viruses. And it will no longer block Word documents and other Office files.

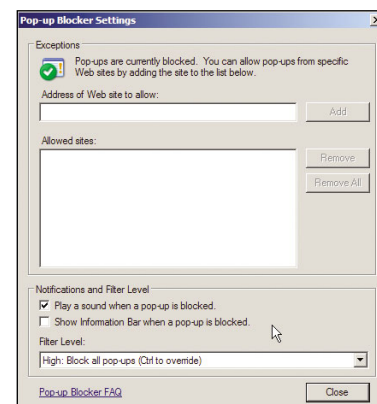
With the attachment blocker turned on or off, Outlook Express will display a warning box any time you double-click an executable email attachment. Because this feature works whether the attachment blocker is on or off, if you commonly receive executable attachments and make a habit of being careful which you run, consider turning blocking off. To do this, from the Outlook Express menu, choose Tools and Options, click the Security tab, uncheck Do Not Allow Attachments To Be Saved Or Opened That Could Potentially Be A Virus under Virus Protection, and click OK.

SP2 also updates Outlook Express to block pictures from external sources in HTML (Hypertext Markup Language) emails (when these pictures display, they validate your email address to spammers, who will likely send more spam). When you receive a message containing such pictures, you'll see blank boxes where the pictures were intended to appear, and a warning appears above the message.

Is It Safe? Is It Necessary?

The buzz around SP2 has been that it may cause problems with certain apps, but to date, specifics have been scarce. The trouble you're most likely to encounter is with apps that access the Internet as part of normal operation and that SP2's firewall might block. You can find instructions for solving this problem in Microsoft's Knowledge Base, article 842242. Otherwise, check the Knowledge Base for news on conflicts as users report them.

If you already have a reliable pop-up blocker and firewall, use an email program that blocks attachments and downloaded graphics, scan email attachments before you open them, don't open email from people you don't know, and regularly update Windows, you probably don't need SP2, at least not right away. You can wait until your firewall license expires or until your pop-up blocker requires an upgrade—or until Microsoft releases a new update or program that requires SP2. ■



SP2's Pop-Up Blocker will vex you less (and allow more space for your Web pages) if you turn off the Information Bar display.

BY MARK SCAPICCHIO



Optimize Your Windows 98 Display

If you are still using Windows 98, you may have changed or upgraded your monitor in order to take advantage of the decreasing prices of larger displays and LCDs (liquid-crystal displays). However, you may not be aware of all of your new monitor's additional features and enhanced capabilities, such as support for higher resolutions or reduced screen flicker.

The reason you may not be aware of this is that Win98 may not have the latest information about your display, so you're not able to take full advantage of your new display. In other words, if Windows doesn't know the capabilities of your monitor, the OS (operating system) won't be configured to provide you with a full range of choices in setting your display characteristics.

All you need to remedy this potential problem is a little knowledge and some time spent following a simple set of procedures that will enable you to fully exploit your monitor's potential and optimize the screen to your preferences.

Monitor Matching

The first thing to do before optimization is to make sure that Windows has the most information possible about your monitor so it will be able to provide you with the most accurate options. First, identify the brand and model of your monitor by checking either the monitor's original box or the back of the monitor. If you can ascertain through research that it's a PnP (Plug and Play) monitor, so much the better.

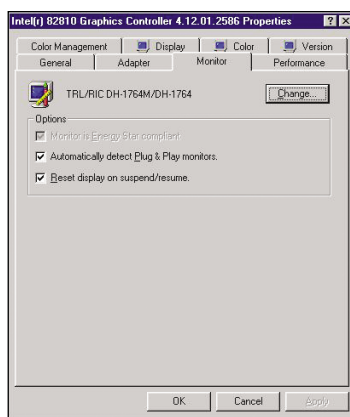
Next, check to see if the information Windows has about the monitor is accurate. To access the Display Properties dialog box, click Start, select Settings, click Control Panel, and double-click the Display icon. Click the Settings tab. Just below the picture of a display, you should see the brand and model of both the monitor and video adapter Windows thinks you have. If it matches the brand and the model you actually have, or if you know that you have a PnP monitor and it doesn't match your previous model, you're in luck: Windows has already identified and configured your display properly.

Just skip to the next section. Other-wise, you've got a little more work to do.

Unless you have a PnP monitor, find the best driver you can. Start your search for a driver at your display manufacturer's Web site. If that proves fruitless, do an Internet search for drivers for the brand and model of your display. Even if a driver diskette or CD came with your new monitor, you'll want to check if a newer version is available. Once you've found the driver, download and unzip as necessary. Typically, you'll want to put the driver in an easy-to-remember location, such as C:\DRIVERS\DISPLAY.

Then, once again from the Settings tab in the Display Properties dialog box, click Advanced and then Monitor and look for the Change button. Click it to initiate the Update Device Driver Wizard. Click Next and then choose Display A List Of All The Drivers In A Specific Location, So You Can Select The One You Want and click Next again. Select Show All Hardware. On the left, select the brand or category of monitor, and on the right, select the specific model or type. If your monitor is PnP, simply choose (Standard Monitor Types) on the left and Plug And Play Monitor on the right. If it's not PnP, select your brand on the left and the exact model in the list on the right. If you find it, you may wish to go ahead and use these conservative but safe drivers provided by Microsoft. If you found a more recent driver during your Web search, however, you may want to use it instead to be sure you're getting the most out of your monitor. To do so, click Have Disk and browse to the location where you saved the driver files. Navigate the selection dialog boxes that follow, being careful to select your specific monitor and clicking Next as appropriate to complete the installation.

If you encounter difficulty, simply shut down and start your system in Safe Mode. (As soon as the computer starts, press and hold CTRL until the Startup menu displays. Choose Safe Mode.) Click Start, select Settings, click Control Panel, and double-click the System icon. Click the Device Manager tab, find Monitors, and click the plus sign (+) to reveal the name of the monitor Windows thinks is attached. Click the name and then click the Remove button below. Confirm the removal by clicking OK. Close all windows and restart your computer. Windows 98 should automatically



Click the Change button on the Monitor tab to start the Update Device Driver Wizard.



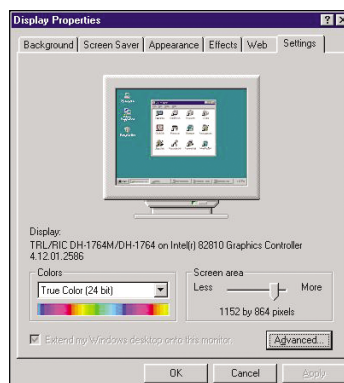
identify your monitor and start the Add New Hardware Wizard. Finish as above.

It's Personal

The key to optimizing your display is to customize it for your situation. Each person is different in several areas that will determine the best settings for your situation, particularly eyesight, monitor and adapter support, and sensitivity to flicker.

Resolution. You're probably familiar with the way eyesight influences the screen resolution you prefer. If you have trouble reading your screen because text is too small, lower the resolution; if everything seems plenty big and you're more concerned about fitting more information on-screen, you can increase the resolution. The size of your monitor matters, too: Someone with a 15-inch monitor probably sees 640 x 480 as a reasonable resolution, while someone with a 21-inch monitor may prefer 1,600 x 1,200. Your video card may not support all of the resolutions your display supports, in which case a video card upgrade is in order.

Flicker. You may not be quite so familiar with the impact of personal sensitivity to flicker (a shimmering effect caused by rows of monitor going on and off, which refreshes the image on the screen) on the computer. Flicker sensitivity varies significantly from one individual to another: One person may perceive that the screen seems to be flashing very, very rapidly to the point of stress and annoyance while another seeing the same screen may see a steady, even calm screen. Upgrading to a modern video card and monitor will eliminate flicker, but that's probably not necessary. Because flicker is caused by a refresh rate that's too slow, just use Windows to tune your screen **refresh rate** (how often the display adapter "repaints" the on-screen display). Increasing the refresh rate will often decrease perceived flicker. Older video adapters and displays running at 60Hz are more likely to give you problems; even those sensitive to



On the Settings tab of the Display Properties dialog box, you can verify what monitor Windows thinks is attached, as well as change the screen resolution.

nonetheless would like larger icons and text, right-click the Desktop, select Properties, and click the Appearance tab. Experiment with different sizes of various items, such as icons and associated text, window titles, help text, and menu items by changing the various sizes and clicking Apply. You can always change them back by selecting Windows Standard and clicking Apply.

After you select your preferred resolution, if the screen seems steady, you're finished. If, however, you see flicker, you may want to either choose a lower resolution or try to manually increase the refresh rate. To do so, right-click the Desktop, select Properties, click the Settings tab, click Advanced, and click the Adapter tab. Click the Refresh Rate drop-down menu to see what your choices are. Don't assume Optimal means highest. If there are no choices higher than 60Hz, you'll need to lower your resolution. Otherwise, select the highest speed available and click Apply. You'll probably see a warning about some monitors

being damaged by improper refresh rates that you can safely ignore (just click Yes) if you have followed the instructions in this article to ensure that Win98 knows about your monitor. Click OK twice, and you're finished: You have customized display settings optimized for you and your monitor. ■



Use the Update Device Driver Wizard to select your monitor's manufacturer and model name.

BY DAVID B. WHITTLE

Windows Me

Take Advantage Of System Restore In Windows Me

How many of us have ever wished we could go back in time and undo the damage caused by something we've previously said or done? Well, the technology to do that isn't available yet, but you can get a small taste of that kind of power with the Windows System Restore feature.

System Restore is a feature that first debuted in Windows Me and is also available in Windows XP. The basic premise behind the feature is simple. When enabled, it monitors certain OS (operating system) components, such as critical system files and the Windows Registry. As modifications are made—usually the result of a software installation or upgrade—the prior configurations are recorded as restore points. These restore points essentially function as snapshots of your system's configuration at a particular moment. If and when something should go wrong, you can use a restore point to roll back your system to an earlier configuration from before the problem occurred.

There's no question that the System Restore feature can be a handy tool to get your computer working properly again after a software installation or other system modification causes an unexpected problem. However, knowing its capabilities and limitations will help you take best advantage of System Restore because it won't miraculously cure all of your PC's potential ills, and sometimes it can create more problems than it solves.

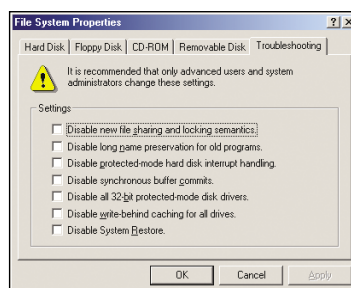
For starters, System Restore doesn't monitor every file on your system; it keeps track only of files germane to the operating system. This includes most files with .COM (command), .DLL (dynamic-link library), .EXE (executable), .SYS (system), and .VXD (virtual device driver) extensions. System Restore also doesn't track changes to any files that are user-created or that are the result of user activity. For example, it won't monitor files with .DOC (document), .XLS (Excel worksheet), or .TXT (text) extensions. This means it

can't, for example, restore an earlier version of a Microsoft Word file to reverse unintended changes. Similarly, it will ignore your computer's Recycle Bin, all Temporary Internet file folders, including the Internet Explorer history, cookies, and Favorites, and the My Documents folder (unless you're using User Profiles—more on that later).

When the System Restore feature is enabled (as it is by default on WinMe), restore points are automatically created (these are referred to as checkpoints) when certain system events occur. This includes most application installations and whenever any kind of update is installed via Windows Update. Even if you don't install any application software or updates, a checkpoint will be automatically created after Windows has been running for a total of 10 hours (the 10 hours don't have to be contiguous) or else every 24 hours (this ensures that folks who may run their computers sparingly still get timely restore points). Creating a restore point takes place in the background without the need for user interaction, but because the process can temporarily bog down your computer, Windows will wait until your system has been idle for at least two minutes before doing so.

In addition to the restore points that Windows automatically creates, you can manually create a restore point any time you wish. You'll want to do this before making a change that System Restore doesn't monitor, such as installing or upgrading a driver or making any manual change to the Windows Registry. It's also a good idea to

create a manual restore point prior to installing most shareware or freeware applications because if an application doesn't use the customary Windows installation process (and free software sometimes doesn't), it won't necessarily trigger System Restore to save an automatic checkpoint.



You can (and should) temporarily disable System Restore, but remember that doing so will delete all existing restore points.



Space Considerations

All of the files associated with restore points are stored as compressed CAB (cabinet) files (which is the same format used on the Windows installation CD) and placed in a folder called Restore on the same drive that holds WinMe. In addition, each hard drive in your computer will also have a hidden Restore folder that System Restore uses for indexing and monitoring.

There is no maximum number of restore points that System Restore can handle, though it is limited by the amount of space available on the hard drive. The amount of storage space set aside for the System Restore feature varies depending on the status of the particular system. If the size of the logical drive (this means the drive letter rather than the physical drive) that Windows is installed on is smaller than 4GB in size, the system restore

folder can be a maximum of 400MB. If the drive is 4GB or greater, however, the folder can grow to as large as 12% of the drive. (The System Restore feature doesn't reserve this space in advance, but rather will consume it as needed.) Irrespective of the size of your hard drive, the minimum amount of storage System Restore can use is 200MB. In fact, if the amount of free space drops below 200MB, System Restore will shut down and only reactivate itself when the requisite amount of free space is again available. And although the System Restore feature is enabled by default in WinMe, if upgrading a computer to WinMe causes the free hard drive space to fall below 200MB, System Restore will be disabled and you'll have to manually turn it on.

As you might imagine, the System Restore feature can consume a large amount of hard drive space, so if you find that space is at a premium, you can reduce the amount it uses. To do this, click Start, Settings, Control Panel, and System. Click the Performance tab and then the File System button. On the Hard Disk tab, you can move the System Restore Disk Space Use slider to the left 10 increments from whatever the maximum is on your system down to the minimum required 200MB.

When doing this, however, it's important to remember that reducing the amount of drive space available to System Restore may possibly cause

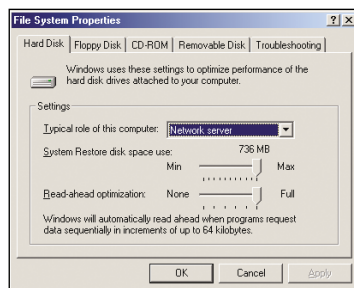
existing restore points to be deleted. Unfortunately, you can't free up space by selectively deleting specific restore points—they can only be deleted by Windows, and the oldest restore points are always the ones that get erased first.

Creating & Applying Restore Points

To manually create a restore point (or restore your system using one you previously created), you'll need to access the System Restore wizard. To access the wizard, click Start, Programs, Accessories, System Tools, and System Restore. The first time you access the System Restore dialog box, you'll be presented with two choices: Restore My Computer To An Earlier Time and Create A Restore Point. Once you've used a restore point to return your computer to a previous state, a third option, Undo My Last Restoration, will appear.

(Restore points are automatically created whenever you use System Restore to return your system back to an earlier state—in case the rollback doesn't solve the problem, you can fast-forward to your most up-to-date configuration.)

To manually create a restore point, select Create A Restore Point. You'll be prompted to give the restore point a descriptive name and click the Create button to complete the process. Conversely, when you want to restore your computer to an earlier configuration, select Restore My Computer To An Earlier Time and click Next. You'll then be presented with a calendar that has the current date selected. Days on which restore points were recorded appear larger and in bold type, and selecting one of them will display the name of each restore point for that day and the exact time it was created. When you select a specific restore point and click Next, you'll be presented with a prompt reminding you to save all open files and close all open programs and to avoid doing anything on your computer until the restoration is finished. Clicking Next one last time will begin the restoration process, which can take from several seconds to several minutes depending on the PC. When the restore is complete, the system is automatically rebooted so that the changes will take effect.



You can specify the amount of hard drive space System Restore uses down to a minimum of 200MB.

Windows Me

Potential Post-Restore Problems

Once you've used System Restore to return your PC to a prior configuration, you may notice certain strange side effects, some of which can be annoying yet relatively benign. It's possible, for instance, that items in your Start menu may be listed in all capital letters. If you use a screen saver password and change it often, you may also notice that an older password has been reapplied (because these passwords are stored in the Windows Registry).

Other likely side effects can be more troublesome. For example, System Restore often does not correctly restore file attributes (such as hidden and read-only), which can often cause unforeseen problems. Also, if you have User Profiles active on your computer, each user has her own My Documents folder, which is part of the Windows Registry and thus monitored by System Restore (unlike the default C:\MY DOCUMENTS folder). If any user's My Documents folder contains files with one of the aforementioned system extensions (such as .EXE, .SYS, and so forth), a restore may delete those files if they didn't exist when the restore point was created.

There's an algorithm bug in the original WinMe implementation of System Restore that prevents checkpoints created after Sept. 8, 2001, from suc-

cessfully being restored. An update to correct this problem is available via article 290700 from Microsoft's Knowledge Base (<http://support.microsoft.com>). However, any checkpoints created before you apply the update won't work once you have installed it.

Although having

System Restore enabled can provide some valuable piece of mind, there are times when it's actually a good idea to temporarily disable the feature. Let's say, for example, that a restore point is created (either manually or automatically by Windows) that includes one or more files that are infected with a virus. While the primary copy of the infected file may eventually be identified and repaired by your antivirus software, the virus will still endure in the copy of the file that's part of the restore point. This is because the folders used to store restore point files are protected—these files can't be modified or deleted. Therefore, an antivirus scan won't be able

Third-Party Options

If you have Windows 98 or Windows 2000, you won't find the System Restore feature on your system. If you use a Windows OS (operating system) that doesn't include System Restore, there are several third-party utilities you can turn to. One of the most noteworthy is Symantec's Norton GoBack 4.0 (\$49.95; <http://www.symantec.com>). GoBack runs on any version of Windows (except Windows 95) and provides capabilities similar to Windows' built-in System Restore. However, because GoBack provides more features and flexibility than System Restore—such as the ability to selectively restore only certain parts of your configuration or recover deleted or accidentally modified files—even Windows Me or Windows XP users may find it worthwhile.

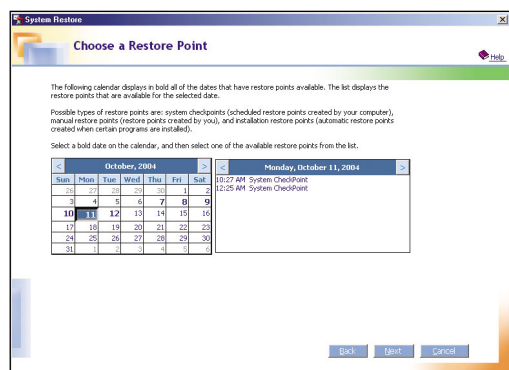
to clean viruses out of the System Restore folder and a virus could potentially resurface if an infected checkpoint is restored.

For this reason, it's best to disable the System Restore feature whenever you run a virus scan on your system. This may not be as simple as it sounds if your PC's virus scans run according to a schedule. If so, it may be wise to conduct periodic manual scans with System Restore deactivated. That's not the only issue to consider, though—once you disable the System Restore feature, all of the existing restore points are deleted and no longer accessible, even if you re-enable the feature.

To disable the System Restore feature in WinMe, right-click My Computer, choose Properties, and select the Performance tab. Click the File System button and the Troubleshooting tab. Select the Disable System Restore checkbox and click OK. Before disabling System Restore, make certain you won't need any existing restore points, and re-enable the feature when the virus scan is finished.

The System Restore feature of WinMe can be useful, but with its promise comes numerous pitfalls. It should be considered a last resort when trying to correct problems. If your problem is the result of installing hardware or software, try uninstalling the product via Add/Remove Programs or Add/Remove Hardware first. If that doesn't work, System Restore may be able to help get you out of a jam. ■

BY JOSEPH MORAN



Selecting a day on the calendar will display all of the restore points made on that day.

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Making Waves

Listen From Anywhere With Internet Radio

Internet radio is still in its infancy. Though there are thousands of stations—large and small, personal and corporate—they constitute only a fraction of potential broadcasters. Geography and spectrum limit terrestrial radio (which, unlike Internet radio, actually broadcasts via radio waves). Only so many stations fit on the airwaves, and they can only transmit so far. Neither factor limits Internet radio.

The first thing to understand about Internet radio is the distinction between streaming and downloading. **Downloading** involves saving files directly to a hard drive and playing them from there (sometimes even while still downloading). Downloads are normally compressed using MP3, WMA, or other formats, and you select them a file at a time. **Streaming**, on the other hand, downloads an audio stream (rather than distinct files) and plays as it downloads directly to a media player (sometimes with a buffer to protect from

the vagaries of Internet transmission). You don't end up with files cluttering the hard drive, and listening time isn't limited by the file sizes you can download. Additionally, most Internet radio streams, especially feeds offered by established stations or through commercial services, pay royalties on copyrighted music and are perfectly legal.

Internet radio is really pretty simple, in its broad sense. Feed an audio source (either recorded digital files or a line feed from a microphone and mixer) to a computer running encoding software. That software encodes the audio source into a format useable by streaming software, running on a dedicated server. Those files pass to the streaming server, which makes them available to everyone with Internet access and the proper software player. On the user end, connect your browser and/or media player to a streaming station's site and play the stream through your PC's sound card and speakers.

1 Digital Audio Files



2 Encoding Computer

1

An audio source comes from prerecorded digital files (those **ripped**, or extracted, from CDs or other sources) or from live feeds mixed through sound card inputs.

2

Webcasting requires two layers of computers. The first layer, the encoding computer, compresses the audio source and converts it to the specialized format used on the second layer, the streaming server.

3

3 Server



This second layer connects to the Internet and serves up audio streams on demand to users with the proper player. The streaming server needs to be a dedicated machine because streaming is so resource-intensive that it precludes other simultaneous use. The encoding and streaming software usually comes as a pair. Apple, Real, and Microsoft offer commercial-grade encoding and streaming products. Software such as PirateRadio (\$29.95; <http://www.pirateradio.com>) offers more consumer-oriented packages. If you wish to become a Webcaster but you're not up for such a daunting technical challenge, check out services such as Live365 (<http://www.live365.com>). At basic service levels (\$9.95 a month, including royalties), you can store and broadcast anything you can (physically and legally) upload.

4

After finding a station (either via a favorite terrestrial station's Web site or through a search for a specific language or genre—browsing stations available from commercial services, including LAUNCHcast from Yahoo! [<http://launch.yahoo.com>] and Live365.com, is also a good route), users must ensure they have the proper player. Most sites display supported players and links to download them. Two common options are Windows Media Player (bundled with Windows) and RealPlayer (free and pay versions available at <http://www.real.com>). Users then connect to the broadcasters' streaming servers with these players, which download and convert the streams to a playable audio format.

Internet



5

The PC's sound card and speakers convert the player's output to audible sounds. If you can hear Windows sounds and then the audio stream, you're all set. Select a stream from the site you chose (you don't necessarily have to listen to live or sequential streams) and listen away. You're more likely to get a more reliable and higher quality stream with broadband access but plenty of stations cater to slower connections, as well.

Request
Streaming Audio



The View From Behind The Desk



The Skinny On Tech Support From Those Who Provide It

IT'S NOT OFTEN you pick up a technology magazine these days without a negative article about technical support. The consumer's perspective is everywhere, or so it seems. This inspired us to get the other point of view, that of the TSS (technical support specialist).

To get this perspective, we interviewed TSSes who perform in-house technical support, as well as TSSes who work for outsourcers, companies that provide tech support on behalf of other companies. (This is how you sometimes end up speaking to somebody in India when you call technical support for a U.S.-based company.)

In all, we interviewed TSSes from the following seven companies.

Software companies that provide in-house technical support. Roxio (<http://www.roxio.com>), Nero (<http://www.nero.com>), and Adobe (<http://www.adobe.com>)—all developers of multimedia software.

Hardware companies that provide in-house technical support. Vision Computers (<http://www.visioncomputers.com>), a PC manufacturer outside Atlanta, Ga., that has been in business since 1992, and LaCie (<http://www.lacie.com>), a manufacturer of storage peripherals, including external USB (Universal Serial Bus) hard drives and optical drives.

Companies that provide outsourcing for software and service companies. ClientLogic (<http://www.clientlogic.com>) handles 100 million customer calls a year for its clients. The ClientLogic TSS we interviewed shared his experience providing support for an ISP (Internet service provider), BellSouth FastAccess Internet Services.

Sento (<http://www.sento.com>) has contact centers worldwide that operate in 17 languages. The TSS we interviewed provides technical support for McAfee's (<http://www.mcafee.com>) line of cyber-security products.

The Heart Of The Matter

To get a feel for what our TSS' takes are on issues surrounding their jobs, we asked them a number of questions. Here are the items we addressed.

Question: Did you receive adequate training to assume your position as a TSS?

Answer: Most of the TSSes indicated they received several weeks of classroom training. Even after formal training, they weren't immediately thrown into the working environment. Each new TSS worked with an experienced TSS, taking calls for a few weeks. ClientLogic tests its new TSSes with mock calls designed to elicit the correct mock solution.

BellSouth initially performed three weeks of training for new ClientLogic TSSes. "Later, BellSouth cut the training to 1.5 weeks in an effort to cut costs," the ClientLogic TSS says, "and the shortened training was not adequate."

TSSes from Vision Computers receive a unique form of training. They often start on the assembly line building computers. They then pick up the software side. "This approach really helped me," our Vision TSS told us, "because I could immediately identify the cause of certain problems, such as a component that became loose or disconnected during shipping, and walk the customer through the process of reconnecting the component."

Question: Do you provide free phone support?

Answer: One issue we discussed was the trend of charging for phone support. Some companies such as Nero charge by the minute with an upper dollar limit, whereas other companies such as Roxio charge a fixed fee. Most companies that charge for phone support still provide free email support.

Some companies, including Vision Computers, provide free support on all calls, even if the problem is the fault of the customer. Others, including Adobe, offer free support when the problem is related to a product defect or installation issue. For more in-depth and how-to questions, Adobe has a fee-based support service called Adobe Expert Support. A customer service agent acts as the arbiter of disagreements between the customer and the TSS if there is a

Outsourcing's Impact

Most end users we have spoken with have a negative view of outsourced technical support. Problems such as poor communications, lack of training, high turnover because of low pay, and great physical distance from the product engineers at the company will continue to plague outsourcing.

And yet, the savings from outsourcing are so significant that the snowball of outsourcing we are seeing today will likely become an avalanche. The really insidious thing about outsourcing is that outsourcers are now outsourcing. According to the ClientLogic TSS we interviewed, ClientLogic is outsourcing its contract to India at BellSouth's direction. How deep will the outsourcing supply chain go?

Ironically, the long-term impact of outsourcing may prove beneficial. The more consumers get frustrated with outsourcing, the more investigation and troubleshooting consumers will do on their own before they even contact technical support. Eventually, the lack of technical support may turn consumers into a nation of super users whose computer knowledge will make them more competitive, productive, and, most importantly, self-reliant. ■

dispute as to which option the problem falls under.

The consumer's perspective on the subject of free phone support is clear: If you've just paid \$50 for software, you don't want to pay another \$35 every time you need phone support. This seems reasonable until you consider the view from behind the desk.

"Our software is so inexpensive that free phone support would consume our profits," one TSS told us. A Nero software TSS told us the quality of tech support calls has gone up since Nero began charging for tech support. "When tech support was free, 90% of the calls we received were questions about the software that were clearly

explained in the user manuals. People didn't read the manuals because it was easier to pick up the phone," he said. "After we started charging for support, we stopped receiving these types of calls."

A Roxio TSS justified paid phone support by telling us that "80% of the time, the customer's problem is unrelated to [the] software. The root cause of the customer's problem is usually a computer virus, spyware, or a user error, such as deleting important files in an ill-conceived attempt at computer housekeeping." He added, "We often waive the support charge if the customer just purchased the product and is having problems installing it, even if the problems are unrelated to our product."

The hardware vendors we spoke with had a different perspective. Both Vision Computers and LaCie view free technical support as an important means of retaining existing customers and attracting new ones. Indeed, if you enter Vision Computers' showroom, the walls are plastered with testimonials about the company's technical support.

Question: Who are the most difficult and easiest customers?

Answer: Combative customers. Our Roxio TSS told us that his biggest problem is combative customers. "The customer is already in a foul mood, perhaps because he has to pay for support or because he may have had negative support experiences with other companies," he told us. Roxio's approach is to calm them down and convince customers they are there to solve their problems.

Professionals in other fields. Both Nero and LaCie told us that their most difficult customers are professionals in other fields. The Nero TSS told us, "These people sometimes think they know everything when, in fact, their knowledge about computers is quite limited. It's easier to work with beginners because they are more willing to let you walk them through a process to solve the problem."

Impatient incompetents. The TSS from Vision Computers told us his biggest problem is working with impatient, incompetent people who befoul their own PC with a virus or spyware and "put the pressure on us to fix the problem immediately."

Uninvolved parties. The TSS from LaCie told us that sometimes the customer will hand his secretary the hard drive and tell him to get it fixed. The intermediary has no knowledge of the product, and it's practically impossible to work with the uninvolved.

Thankless consumers. One TSS told us about customers who insist there is a program bug. "It's difficult to troubleshoot when the customer is very insistent from the start that he knows what the problem is. Even after we prove that the problem was not product-related, the customer rarely thanks us for our efforts."

All of the TSSes we interviewed told us that the easiest customers are the ones who are novices because they are generally patient and enthusiastic about working to find the solution.

Question: If a customer has to call back on the same problem, can he speak to the same TSS?

Answer: While all of the companies acknowledged lack of continuity as a source of customer frustration, the only companies we interviewed that offered continuity were those who provided in-house technical support and had all of their TSSes in a single location—Vision Computers, LaCie, Roxio, and Nero. The other companies rely on notes the first TSS takes to bring the second TSS up to speed, which is an approach that, in our experience, doesn't always work very well.

Question: What can a TSS do that is really wrong?

Answer: The TSSes we spoke with spoke negatively about lazy peers. "The worst thing a TSS can do is to tell the customer to reformat his hard drive and reinstall Windows," our Roxio TSS told us. "This is the lazy way out, and it may not even solve the customer's problem."



The Sento TSS said that losing patience is also wrong. He also said advising customers to make changes to their computers before walking them through a Registry backup or the creation of a System Restore point was wrong and dangerous.

Question: To what extent do you use scripts during calls?

Answer: With the exception of ClientLogic/BellSouth, all of the TSSes we interviewed insisted they only use scripts to collect basic information or deal with difficult customers. Beyond that, they were free to troubleshoot the problem in the most effective manner.

Vision Computers told us point blank: "We don't use scripts. Scripts are a waste of time because they require the customer to do things that have absolutely nothing to do with solving their problem."

Our ClientLogic TSS told us that the lowest level TSSes (tier 1) were "written up" if they did not follow an exact script on technical support calls. If a TSS was written up for this violation a second time, that person was fired. This was a BellSouth requirement, our ClientLogic TSS told us. Higher-level TSSes (tier 2 and 3) had more freedom to act independently.

Question: Do performance measurements prevent you from spending enough time with the customer?

Answer: The TSSes acknowledged they are measured in part on the number of calls they handle, but they also stated that customer satisfaction was the overriding performance measurement and there was enough slack in the call-handling measurement to allow them to do their job properly.

Question: What can a customer do prior to calling technical support to get the most out of a support call?

Answer: Our Nero and McAfee TSSes told us that most technical support calls are unnecessary because the

answer to most questions can be found on the companies' Web sites.

Other TSSes mentioned third-party-sponsored forums. These forums are often unofficially supported by employees of the company. BellSouth employees unofficially monitor the BellSouth FastAccess DSL forum and provide solutions to problems raised by customers. Once you have exhausted other sources, TSSes recommend you do the following to prepare for a call.

First, be in front of your PC when you call. "We can't help you diagnose and solve a problem with your home computer if you call us from work or your car," one TSS told us. Second, document the problem and what you have already tried to solve it.

Third, have the product name and version number of the software you are using if you are calling for software support. Last, have the model number and serial number of the hardware if you are calling for hardware support. Also, have the driver disc and your Windows CD in hand, if possible.

Question: What do you think frustrates customers the most when they call technical support?

Answer: Our Vision Computers TSS told us that customers are frustrated because after just a few weeks, their new computers are already infected with dozens of viruses and spyware. "At this point, the computer is such a mess that they have no option but to bring or ship it to us to have it fixed," the Vision Computers TSS told us. It surprised us that Vision Computers viewed these types of problems to be within the boundaries of free tech support. That's a lot of effort to support customers who don't follow basic defensive computing practices.

Vision also pointed to the Windows XP Service Pack 2 as a major cause of frustration, as it caused many apps to stop working.

Our Roxio TSS told us that customers are frustrated when a product doesn't work out of the box. "Often, this has nothing to do with our software. The customer may have spyware on his system or something odd about his system configuration that causes conflicts with our software."

Our LaCie TSS had one really frustrated customer, an IT professional who told our TSS that "LaCie products were crap because she couldn't get the DVD in the drive." It turns out she had the drive upside down.

Point, Counterpoint

As with everything in life, there are two sides to the tech support situation. Perhaps this glimpse into what TSSes deal with on a daily basis will help you better understand tech support so you can work with your TSS to get your problem resolved. ■

BY ALAN LUBER

Bad Eggs

We've heard the TSS' view, but it doesn't negate the fact that consumers are generally unhappy with technical support. Outsourcing has exacerbated the problem because outsourcers may not speak English well and are not always adequately trained.

Strangely, companies often point the finger at their outsourcers when customers complain. Sony recently did just that, blaming its outsourcing partners for poor product support.

So, what exactly should you do when you call technical support and get a bad egg? Hang up and call again, and you do that as many times as possible until you are connected with someone who sounds reasonably intelligent, intelligible, and enthusiastic. ■

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Inching Toward Perfection

Self-Improvement Software Makes For A Better You

If you're a completely perfect person, you can stop reading this article right now. As for the rest of us, there are always a few new skills we'd like to acquire and a few old habits we'd like to break. Sometimes it takes willpower, sometimes special training, and sometimes just good old-fashioned practice. Whatever the case, there is plenty of specialized software out there that can help. We gathered a small cross-section of self-improvement applications for review and found that they differ as much in style and technique as in subject matter.

Mind Games

Everyone's memory fails them on occasion. To help decrease the frequency of these instances, take a look at Test And Improve Your Memory (\$29.99; <http://www.happyneuron.com>). This app is a collection of mental exercises disguised as a series of 12 games. Users can play the games in any order or follow a suggested sequence. Some games clearly require some memorization, while others, despite this product's title, require just a keen eye for detail, some skill at spatial analysis, or good problem-solving ability. Each game has a number of

permutations or levels that vary in difficulty, and the program encourages the user to move on to a more challenging variant at the completion of each level.

The games are short (each round lasts just a few minutes) and each game is scored according to two criteria: accuracy and speed. You get a virtual award depending how well you did. To increase the sense of competition, the program can remember and compare the scores of multiple players. You can also compare your scores against those of other people, but the scores of the other people are presented as a wide range of low and high scores.

The games are fun and genuinely require attention and concentration. Some of the games seem easy from their descriptions but turn out to be challenging. A good example is the game called Sleight Of Hands, which presents a series of photographs of people's hands and asks the user to identify whether each photo shows a right hand or a left hand. When you're under pressure to make a decision quickly, it's hard to achieve 100% accuracy.

Of course, the big question is whether these games improve your

mental skills. The program does keep a history of your scores, so you can see if you're showing improvement. But getting better scores might simply mean you're getting better at the games. Whether that enhanced game-playing skill will transfer to other, more practical areas of your life remains an open question.

Clearing The Air

Rarely do you encounter a smoker who doesn't express some desire to



Writing In The Stars is a word game that requires concentration and planning.



quit. System 12 Self-Improvement Interactive: Smoke Free! (\$39.95; <http://www.clydesight.com>) promises to help smokers kick the tobacco habit through a series of 12 brief modules. The modules require very little activity on the part of the user—but that's the point. The key here is to relax.

In this spirit of effortlessness, the modules pretty much run by themselves. Each module is presented by a narrator who speaks in a soothing voice, backed up by a musical score. The narrator's words are scripted to reinforce feelings of relaxation, well-being, and self-confidence.

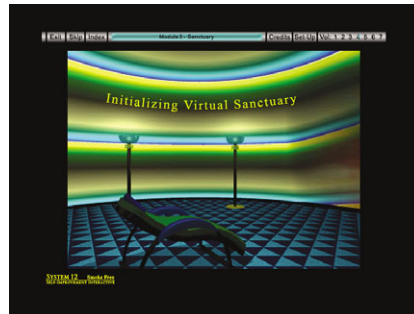
The first five modules have nothing to do with smoking and would probably apply just as well to any other life change you're trying to make. These modules take you through some relaxation and breathing exercises. It then introduces you to your sanctuary, a "very safe and wonderful place" inside yourself, where you go to get away from the stress of the world and to work on your goals. In case you're having a tough time finding it, the program provides a virtual interactive sanctuary in the form of a rainbow-colored dome in the midst of a secluded forest, complete with an observation recliner from which you can "confer with the universe." QuickTime-VR controls allow you to look around and open the sky dome and look at the stars. Your sanctuary has a hallway leading to your Power Studio (by way of 12 Steps Of Serenity and six Steps Of Commitment), and that's where you get your smoke-free work done.

Module 6 encourages you to think about the details surrounding your habit. By making yourself acutely aware of your habit, you can begin to make the decisions necessary to change it. In Modules 7 and 8, you exercise your willpower by making on-screen cigarettes disappear, while affirming that you are smoke-free.

Module 9 talks about alternatives and encourages you to repeat phrases such as, "Every time I have the urge to smoke, I will want to eat some grapes

instead." Module 10 helps you learn to disrupt the smoking habit by intervening in its details.

In Module 11, you'll learn to replace your desire to smoke with the desire to achieve the beneficial results



Your virtual sanctuary helps you become smoke-free.



Positive affirmation is an important part of kicking your tobacco habit.



Brush up on your vocabulary with Spanish Before You Know It.

of quitting. In Module 12, you become empowered by repeating positive affirmations while making your way back up those 18 steps that lead back into your sanctuary.

The key to success with this program is repetition. You're encouraged

to return and repeat modules or exercises as often as you like.

Easy As Uno, Dos, Tres

Sharpen your skills with Spanish Before You Know It (\$29.95; <http://www.transparent.com>). This program is not a course in Spanish—rather, it's a flashcard-style review of Spanish vocabulary. You could buy a deck of real flashcards, like people did in the old days, but you'll find some advantages to this system. It keeps track of your progress, it knows which words you're having trouble with and keeps putting those in front of you until you've mastered them, and it remembers your scores. It also pronounces each word.

Spanish Before You Know It provides four kinds of activities. In the Recognize It activity, you're shown the Spanish word and instructed to think of or say the English equivalent. You flip the card when you're ready and tell the system whether you guessed right. The Know It activity is similar, but this time, you need to actually type the English translation. The Produce It and Own It activities are similar to the other two, but this time, you're shown the English side of the card and must translate it into Spanish. You get higher scores for mastering the English-to-Spanish activities than the other two.

The flashcards in Spanish Before You Know It are organized into 66 categories. There are up to 50 cards in each list, and your scores are maintained separately for each list.

The system lets you create your own lists and attach WAV files to each card. You can also print, import and export lists, and share them.

A New, Better You

Self-improvement should be a never-ending process. It requires discipline and requires the right tools and training. If you provide the former, your PC can help you with the latter. ■

BY RICK BROWN

The Eyes Have It

Tools For Vision-Impaired Users

IF YOU HAVE A VISION IMPAIRMENT, IT goes without saying that you must rely on new methods and devices to perform many of life's functions. The good news is that PCs equipped with assistive technology can level the playing field and give you much of the quality of life you deserve. Jay Leventhal, editor in chief of *Access-World*, a publication of the American Foundation For The Blind, says that "while many products designed to help persons with vision impairments are just too expensive, the good news is that the blind community has gained more access to computers and information than ever before." Over the past two decades, the quantity and quality of technology designed to meet the challenges of persons who are blind or visually impaired has exploded. This trend has been boosted by the growth in PCs, the Internet, and information technology. We'll spotlight computer-based technologies to assist persons who are blind or visually impaired.

Size Most Definitely Matters

If you're visually impaired but still have some eyesight, video magnification may be ideal. In a nutshell, video-magnification software increases the size of text and graphics displayed on the screen. Video-magnification apps also let you adjust colors and contrast settings, further reducing eyestrain and making objects easier to see.

There are numerous video-magnification applications available, and

some are free. Magnification software provides 1X magnification to 16X magnification and usually allows you to change colors, brightness, and contrast settings. Many include a speech engine, which lets you have magnification and voice output at the same time. For many, this proves to be a powerful combination because it lets you use your eyes to focus on detail but fall back on the speech engine when your eyes grow tired. If you're not sure video-magnification software is for you, many apps have trial versions.

Magnifier, a magnification applet, comes bundled with Windows 98/2000/Me/XP. The program provides up to 9X magnification, about half that of other third-party packages. While not as feature-rich as the commercially available screen enlargers, the program assists you with tasks such as typing documents, surfing the Internet, and sending email.

ZoomText (\$395; <http://www.aisquared.com>) is a popular video magnification program. It can magnify up to 16X and is available with an optional screen reader that provides voice output in conjunction with magnification for \$595. It's compatible with Windows 98/NT 4.0/2000/Me/XP.

BigShot (\$99; <http://www.aisquared.com>) provides a more minimalist approach. The software is aimed at Win98/NT 4.0/2000/Me/XP users who

require low magnification levels.

BigShot magnifies from 1.5X to 2X. BigShot can magnify either the active window or the entire screen.

MAGic (\$345 to \$595; <http://www.freedomscientific.com>) is another Windows-based screen magnification program. Like other enlargement packages, MAGic can be purchased in two basic flavors: magnification or magnification with speech. Both versions provide up to 16X magnification.

Scan And View (\$89.95; <http://www.readingmadeeasy.com>) is assistive software that converts your PC to a video-magnification system. The package requires a standard flatbed scanner. Scan And View lets you scan any document or image and then view that document or image immediately on your computer screen. The image can be enhanced and enlarged to suit the reader's requirements. The program provides access to written or graphical material and is an inexpensive alternative to a video magnification system. Capable of providing up to 24X magnification, the program features large, easy-to-see icons and menus.

Speech Reads The Screen

If you have a more serious visual impairment and are unable to take advantage of video-magnification software, you can use speech-enabled software or





Jaws Standard is a Windows-based screen reader that provides speech output to assist persons who are blind or visually impaired. The package can also drive an optional Braille display and works with most off-the-shelf Windows applications. Jaws works with most Windows-compatible sound cards.

a screen reader to access your PC. Speech generation is a powerful technology that can read documents, Web sites, spreadsheets, databases, emails, and more. Such apps can also "speak" your keystrokes, giving feedback while you type. According to John Oliveira, president of the Association Of Blind Citizens and a visually impaired computer user, "adaptive technology is the great equalizer for people who are blind or visually impaired. As director of a nonprofit, I use a screen reader to access the computer, oversee financials, surf the 'Net, and to perform basic office functions. I couldn't do my job without it."

Speech-Enabled Applications

Speech-enabled applications include a built-in voice feature, letting someone who is blind or visually impaired operate the software without having to see the screen. The one big drawback of speech-enabled apps is that speech stops when you exit the program. If you want speech with every application on your PC, your only choice is to purchase a screen reader for considerably more cash. But speech-enabled applications are cost effective and often easier to use than mainstream software, if you can live with the limitations.

The Talking Checkbook (\$59.95; <http://www.readingmadeeasy.com>) is a speech-enabled checkbook management program. The software lets users manage unlimited accounts and can print standard QuickBooks checks. The Talking Checkbook supports U.S. dollars, British pounds, and euros. Capable of providing reports in multiple formats, you can export reports into Word, Excel, or Lotus. The program also comes bundled with a tactile check-signing guide, allowing users to sign checks once they are printed.

Talking Word Processor (\$89.95; <http://www.readingmadeeasy.com>) is a speech-enabled text-editing program that includes a spell checker. It can read and write most standard file formats. The company's offerings also include the Talking Dictionary (\$39.95) and the Talking Electronic Library (\$39.95) of over 1,500 electronic texts.

Screen Readers

Screen readers are self-contained programs that make your PC into a talk. Screen readers are **memory resident** (permanently in memory, which allows for quick access) and work with mainstream applications. They are much more powerful and are more expensive than speech-enabled apps.

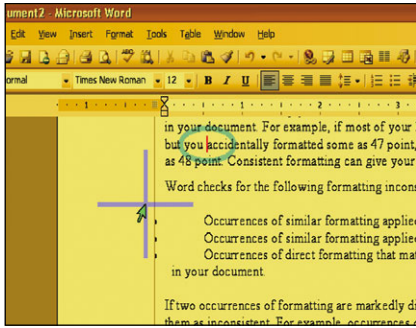
Microsoft Narrator is a simple screen reader that comes bundled with WinMe/2000/XP. The program requires a sound card and speakers. While Narrator will work with many Windows applications, it is not as customizable or flexible as a commercially available screen reader, but the price is right. Narrator is useful in conjunction with Microsoft's Magnifier.

Jaws For Windows (\$895; <http://www.freedomscientific.com>) is a screen reader compatible with Win98/Me/XP Home. Jaws requires a sound card and speakers and can provide voice output. Jaws can also provide Braille output if you have a Braille display connected to your computer. As it's compatible with most Windows apps, Jaws can help with word processing, database management, spreadsheets, Internet browsing, email, and programming. Capable of extreme customization, Jaws includes a built-in script language, letting you build voice interfaces for mainstream Windows applications. For Win2000/NT/XP Pro users, Jaws Professional is available for \$1,095. Freedom Scientific also offers Connect Out Loud (\$249), a simplified screen reader that helps users with vision impairments to perform word processing, email, and Web browsing with voice output.

Window Eyes Professional (\$795; <http://www.gwmicro.com>) is another popular screen reader. Like most screen readers, the package can speak keystrokes and read text displayed on the screen on demand. The software requires a sound card and speakers and can also drive an optional Braille display. Window Eyes can work with all versions of Microsoft Windows, works with most mainstream apps, and has an simple menu for customization.

LookOUT (about \$150; <http://www.screenreader.co.uk>) is a fairly low-cost screen reader. The program requires a sound card and speakers, is easy-to-use, and includes a Visual Basic-style language so advanced users customize.

Spoken Interface for Mac OS X is a free screen reader Apple offers. It has



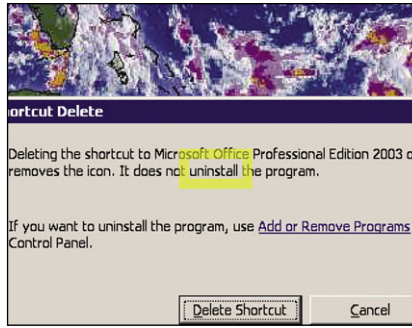
MAGic is screen magnification software designed to assist persons with low or limited vision to access Windows-based computers. The package can magnify up to 16X and works with most off-the-shelf applications software such as Microsoft Office and WordPerfect. **MAGic** can also be purchased with an optional speech engine that allows the package to provide magnification and voice output at the same time.

voice output and supports keyboard navigation to the OS and applications, necessary for users who have difficulty using a mouse. Spoken Interface works with the built-in suite of speech engines on the Mac platform, and Apple has re-engineered the engines to make them more understandable at higher speeds.

Cracking The Books

Without vision, information in print can present a barrier to working, learning, and independence. While electronic books have been on the increase, a great deal of information is still offered only in print. You can overcome the barriers inherent in the printed word by equipping your PC with a flatbed scanner and speech-friendly OCR (optical character recognition) software. This will convert your PC into a reading machine, capable of reading books, magazines, print correspondence, bills, and more.

All you have to do is place the material face down on the scanner, close the lid, press a key on the keyboard to start the scan, and sit back and listen to the book as your computer reads it aloud. You can adjust the speech rate, volume, pitch level, amount of punctuation, and other settings. With most packages, you can choose a male or female reading voice. With many talking OCR packages, you can edit and save the file and even convert it to MP3 audio. This



lets you create audio books, which you can play on your PC, PDA (personal digital assistant), or MP3 player. Speech-enabled OCR packages are versatile and capable of reading most type styles, but not handwriting.

Kurzweil 1000 (\$995; <http://www.kurzweilededu.com>) is a speech-enabled OCR app. The software requires a sound card, speakers, and a scanner. With a single keystroke, you can have virtually any printed text read out loud. You can edit and save scanned material and convert scanned text to MP3 audio.

Open Book (\$995; <http://www.freedomscientific.com>) is a speech-enabled OCR program that lets you scan and read almost any printed material. Similar to most OCR packages, Open Book requires a flatbed scanner and sound card. The package converts scanned text to speech and can read virtually any type style. Open Book also comes bundled with Connect Out Loud, a simplified screen reader that provides speech output for word processing, Internet browsing, and email.

TextCloner (\$99.95; <http://www.readingmadeeasy.com>) is an inexpensive OCR program. The software is aimed at users who have a screen reader and a sound card, and it works with most off-the-shelf flatbed scanners. According to the company, TextCloner can be sold for less because it piggybacks on existing screen readers owned by many blind or

visually impaired consumers. For users who already have a screen reader, TextCloner is an inexpensive option.

Future Trends

The field of assistive technology is undergoing fantastic change. Case in point: Speech and Braille-enabled GPS (global positioning system) devices are starting to become practical. These high-tech systems enable blind people to navigate through unknown terrain without sighted assistance. See Sendero Group (<http://senderogroup.com>), VisuAide (<http://www.visuaid.com>), and Freedom Scientific (<http://www.freedomscientific.com>) for information about these systems. If you're on the hunt for a specific piece of assistive technology, take a look at ABLEDATA (<http://www.abledata.com>), a free searchable online database containing tens of thousands of adaptive devices. Another good source for inexpensive assistive devices is Independent Living Aids at <http://www.independentliving.com>. To learn about the guidelines for making software, Web sites, and information more accessible, point your browser to Web Accessibility Initiative (<http://www.w3.org/wai>), The Access Board (<http://www.access-board.gov>), and JimThatcher.com (<http://www.jimthatcher.com>). With the growth and development of PCs and information technology, we can look forward to better and less expensive assistive devices to level the playing field for millions of individuals with vision impairments and for more assistive technology to be built directly into PCs and their associated OSes. According to Kathy Cahill, coordinator of the MIT Adaptive Technology Lab, "I'm encouraged by the trend to incorporate adaptive solutions directly into Windows, Mac, and Linux platforms. This makes the technology much more widely available and affordable for everyone." ■

BY JOE LAZZARO

Mr. Modem's Top Picks To Click

It's the start of a brand new year, and what better way to sober up and hit the Web running than with some extraordinarily useful Web sites? The following are a few of my favorite sites, in alphabetical order, that I find helpful, informative, or just plain handy to have a mouse-click away.

Connection Keeper (<http://www.gammadyne.com/conkeep.htm>)

Prevents your dial-up Internet connection from appearing idle to your ISP (Internet service provider), thus preventing your from dropping your connection.

Cyber Café Guide (<http://www.cybercafe.com>)

Going on vacation doesn't have to mean leaving the Internet behind. (If you listen closely, you can hear Mrs. Modem sobbing in the background.) Search for more than 4,200 cyber cafes in 142 countries that provide public Internet access. What's a vacation without email?

Download Calculator (<http://tinyurl.com/6z9tm>)

Use this handy resource to determine how much time is required to download a file. Enter the size of the file, click the Calculate button, and read the download time for your connection speed. I don't know about you, but I like to know if I have time while downloading to make a sandwich, take a nap, or in the case of SP2, to learn neurosurgery.

Mail2Web (<http://www.mail2web.com>)

Retrieve your email from any POP3 account. No fee, no need to register. Just enter your email address and password to get your messages from any computer with Web access.

Mr. Ed's Email Stripper
(<http://www.mistered.us/stripper/index.shtml>)

Paste the text you want to tidy up, select the brackets (>) or other items you'd like to remove, and then click Strip It.

Numion Speed Test (<http://www.numion.com>)

Unlike other connection-speed tests, Numion polls approximately 40 well-known Web sites (in your choice of geographical region), and then presents an average surfing speed. This provides a more accurate assessment of your data-transfer rate than a single, isolated test.

Quickbrowse (<http://www.quickbrowse.com>)

A Web-based service that combines Web pages into a single Quickbrowse page for faster viewing. For example, if

you normally visit the CNN, MSNBC, and your local newspaper or TV station Web sites, Quick-browse will combine all three sites into one page that you can quickly scroll. The service is \$12.95 for three months, but you can try it for free for 14 days.

Return Path Email Forwarding (<http://www.returnpath.net>)

Use this handy, free service for change-of-address email forwarding or when you change ISPs. Simply fill out the change-of-address form and then you can notify people of your new address or have incoming mail automatically forwarded to your new address.

Soople (<http://www.soople.com>)

While Google (<http://www.google.com>) is the de facto standard for search engines today, Soople assembles Google's advanced features on one page for easy access.

Spamhole (<http://www.spamhole.com>)

A free service that provides short-lived email addresses. After creating an address, all mail is forwarded to your real address. After two hours (up to 72 hours), any additional mail sent to your Spamhole address won't find its way to you. It's perfect for those pesky Web sites that insist that you register—which begs the question, "What email address should you use to register for Spamhole?" Answer: "None." No registration is required.

Tiny URL (www.tinyurl.com)

If long, convoluted Web addresses are making you sURLy, convert them to short, easy-to-manage addresses with Tiny URL. Copy and paste a long URL and then click the Make Tiny URL! button.

If you have a favorite Web site without which life would have no meaning, send me an email and tell me all about it. If your submission is selected for publication, you'll receive an official Mr. Modem mouse pad with my compliments. (Talk about hitting the jackpot!) ■

BY MR. MODEM

Mr. Modem (Richard Sherman) is an author, syndicated columnist, radio host, and publisher. "Mr. Modem's Weekly Newsletter" provides personal responses to subscribers' computer and Internet questions, plus weekly computing tips, Web site recommendations, virus alerts, hoax warnings, and more. For additional information, visit <http://www.MrModem.com>.



Classified . . . But Not Top Secret

Find Jobs, Apartments & More Using
craigslist's Online Classifieds

LOOKING FOR A NEW JOB OR AN OLD FRIEND? A domestic housecleaner or a foreign car? A white couch or a black tuxedo? Sure, you could scour the newspaper classified ads every day, attempting to decipher cryptic lines of text and circling the most promising items, only to find that they're unavailable because of the lag time between the ad placement and the newspaper's printing schedule. Or, you could head to one of the most useful sites on the Internet: craigslist (<http://www.craigslist.org>).

Overall, we must admit that craigslist might just be the Internet's best ugly site. Begun nearly a decade ago as a way for one individual to email happenings in the San Francisco area to a few friends, craigslist has blossomed into a network of local community bulletin boards where millions of people across the United States (and more recently, around the world) share information on jobs, housing, community events, items for sale, and other important goods and services. If you're looking for or want to get rid of something—anything—the free craigslist site is a must-visit destination.

Become Part Of A Community

One glance at the craigslist home page will give you a strong indication of what the site contains. Because craigslist's founder, Craig Newmark, lives in the San Francisco area, the site defaults to the San Francisco Bay Area posts. But over the years, craigslist has added many other U.S. cities, from Atlanta to Washington,

D.C. You'll see these cities listed alphabetically in the right panel of each city's main page. To check out listings in, say, Colorado, click the Denver link to view the Denver/Boulder posts. The craigslist site also recently added international cities. In September 2004, for example, three well-known cities made the list: Sydney, Australia; Dublin, Ireland; and Edinburgh, Scotland.

Tips For Using craigslist

Check out the founder's inner thoughts. If you want a peek into the character of craigslist's founder, Craig Newmark, click Craig Blog from the left panel of any city's main page. Here you'll find Newmark's thoughts on whatever happens to strike him as worth writing about, such as politics and his personal privacy.

Get help. The craigslist site carries hundreds of thousands of posts and records more than 1 billion page views each month. With that much traffic, there are bound to be some questions from users, but the Help and FAQ areas are a bit hidden. Click the tiny About Us link at the bottom of the left panel of any city's main page for information about using the site.

Find out what's up—or down. craigslist has recently added System Status, a feature that describes current and resolved site issues. If you're wondering why the image hosting crashed when you loaded an animated GIF (Graphics Interchange Format) or why you received an error message while flagging a post, click the System Status link at the bottom of the left panel of any city's main page for an explanation.

Each city's main page mirrors the San Francisco Bay Area page, with the only noticeable difference being the number of posts in each category. Not surprisingly, larger cities tend to have more posts than the smaller or more recently added cities.

Each city's main page contains a list of categories and subcategories in the center. To the right of the categories is the directory of cities; on the left is a list of miscellaneous tools and information, including a search engine and links to administrative details. Because the key content appears in the center of the page, we'll begin our site exploration there.

Each city's page consists of nine main categories: Community, Housing, Jobs, Personals, For Sale, Discussion Forums, Services, Gigs, and Resumes. Each of these main categories, with the exception of the Resumes category, has a set of subcategories. For example, under Services, you'll find such topics as Computer, Automotive, Household, Financial, Legal, and Lessons. Under the For Sale category, you'll find Barter, Books, Free, Tickets, Wanted, and Electronics, just to name a few. And, under the Community category, you'll find Musicians, Pets, Classes, Events, and Volunteers, along with several other subcategories. Next to each category name, you'll see a number that represents the number of current posts.

The most popular area of the site, measured by the number of visitors who go to that section each month, is the Jobs category, so we decided to take a closer look. Clicking a Jobs link takes us to the main Jobs page for that city, where the site organizes its listings by date, with the most recent posts at the top. When we checked the San Francisco Bay Area job posts, there were more than 600 listings posted on that day alone. A quick scan revealed a wide range of available positions, from an advertising director to a loan officer to a special education teacher.

FACT SHEET

craigslist

Craig Newmark is a popular man. Back in 1995, he began sending email messages to a short list of friends, notifying them of events in the San Francisco area. But as friends recommended other types of messages, such as employment opportunities and apartments for rent, his message topics expanded—and so did his list. Within a year, he had realized the value of his email messages and posted that information on the Web so others could view it. In the past five years, since adding other cities, craigslist's traffic has increased exponentially, and today Newmark has more than 5 million "friends" worldwide.

The look of the site has changed quite a bit since it first launched, but it's behind the scenes that the more significant changes have taken place. As recently as early 2000, all the site data was hosted on a single PC, but the site now relies on what CEO and President Jim Buckmaster labels as more than 60 "beefy servers." Also, craigslist is no longer administered by one individual. A staff of 14, roughly split between tech support and customer service, work full-time to keep craigslist up and running. And you may see more visible changes in the near future: As craigslist adds new categories and other international cities, don't be surprised if you see some pages displayed in languages other than English. ■

Select any job listing to see a brief description. Because individuals post each listing, the contents differ from one to the next, but they typically include the job's duties, education and/or experience requirements, start date, salary, and contact information. If you find a job listing that interests you, click the email address next to the Reply To line to send an email via your email client, or look through the

item for a phone number or mailing address. And, if you see a position that's not for you but might be right for someone you know, click Email This Posting To A Friend to forward the job listing using craigslist's form.

Although scanning these listings can give you a good idea of the types of job posts, it also can give you a headache. For example, there are tens of thousands of job posts for the San Francisco area and clearly you won't want to scroll through the entire list to find which ones are appropriate for you. Fortunately, you have a couple of options: One, whittle down your list by selecting any of the Jobs' subcategories from the city's main page; two, because each job post carries a link to an applicable subcategory, you can access a subcategory list via a job post.

In addition, you can take advantage of craigslist's search engine. At the top of each Jobs page is a search engine that lets you search by keyword. Enter a keyword, select the subcategory from a drop-down menu (which also includes the option of searching all subcategories), and click the Search button. Plus, you can select various checkboxes to search employment listings according to five popular terms: telecommute, contract, internship, part-time, and non-profit.

For Sale is another popular category. Return to a particular city's main page and click the For Sale link to see a variety of items, including tires, computers, and wedding gowns. As with the Jobs category, the For Sale category includes a search engine at the top of the page, but this category's search engine lets you search according to price by entering minimum and maximum dollar values. And, as with most of the category and subcategory listings, the For Sale page also contains a few links at the top. These links highlight either external sites that craigslist staffers deem worthwhile, such as the San Francisco Bicycle Coalition or City CarShare, or relevant internal pages on the site, such as information on computer forums or cashier check scams.

The Discussion Forums section differs slightly from craigslist's other main categories. Here is where you'll find users talking about posts, often asking for and receiving help from other site visitors. For example, one visitor noted that a post advertised two different warranties and wondered which was better, while another visitor asked for suggestions on purchasing a laptop. craigslist divides the Discussion Forums category into more than four dozen categories, from arts to writers.

Post Your Own Contributions

Of course, craigslist is more than simply viewing and responding to posts; it's also about posting your own notices online. craigslist charges a small fee to post job ads in San Francisco (\$75), New York (\$25), and Los Angeles (\$25), but other than that there are no posting fees. Free posts are part of what craigslist calls the "self-service" mode. You submit a post by going to a city's home page and clicking Post To Classifieds in the left panel. Select the post type, such as housing or personal/romance, and follow the on-screen instructions for filling out the online form. Once you've submitted the post, it usually will appear on craigslist within 15 minutes or so. And if you've made a mistake, you can edit the post or delete it entirely (also within minutes).

For the most part, craigslist has a bare-bones look and feel, but it is possible to add pictures to posts, as long as the pictures are hosted elsewhere online. craigslist supplies you with simple HTML (Hypertext Markup Language) instructions for linking to these pictures, and although the site doesn't encourage much HTML coding (it doesn't support JavaScript or applets, for example), you can use HTML in the body of the post. You also can post anonymously. The length of time that posts stay online varies by city and category, but many stay on craigslist

Posting a [apts for rent listing on san francisco bay area craigslist](#) + [city of san francisco](#)

Required fields are in **green**.

Realtor: ☐ **BR** Posting Title: (please mention area for a post on report) ([help](#))

Posting Description: ([help](#))

Your E-Mail address: (We need this to send you the self-publishing kit.)

☒ use this email as my reply-to ☐ generate this email & use as my reply-to ☐ no email reply-to

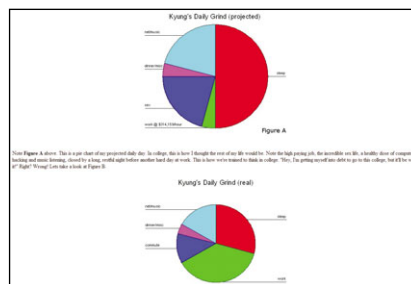
Street/cross street: Nearest Cross Street: City: State: ** a map link will be created from your street, cross street, city, and state info

(please use abbreviations like st, or ave, or hwy)

☐ cats OK ☐ dogs OK
☐ ok for others to contact you about other services, products or commercial interests

[Continue](#) [Add images](#)

You can easily add your own post to craigslist by filling out a brief form.



Most craigslist posts are simple text, but there are some humorous exceptions.

for 30 days. Plus, archived posts are located at Yahoo! Groups.

craigslist is self-policed remarkably well, but occasionally, you may see an inappropriate post. craigslist encourages its visitors to contact the poster directly and has a mechanism for notifying staff members when a post falls into the wrong category, has prohibited content, or is obviously spam. At the top of a post, you'll find a Please Flag With Care link. If enough visitors flag the post for the same reason, craigslist will contact the poster.

OK, let's head back to a city's home page to see what else craigslist has to offer. In the left panel, underneath the Post To Classifieds link, you'll find several other useful tools. Confused about how to reply to a post or wondering why someone deleted your post? Click the Help link for guidelines and answers to FAQs. Would you like classified posts sent directly to your email program so you're notified immediately when that size 40

regular with 32-inch waist tailored pants silk Versace suit is up for sale? Click the Subscriptions link and follow the instructions to sign up for email notifications based on area and category.

Below these links sits the Event Calendar. The calendar has the current day highlighted in yellow, and you can view dates for the next four weeks. Click any date to scroll through a list of event titles and dates. If you find one that interests you, such as the "Italian Opera and Standards" event, you can click the link to see more details about that event.

The left panel also contains miscellaneous but valuable notices and information about the site and the craigslist organization. For example, the Craigslist Foundation is a nonprofit group that helps emerging nonprofit organizations become established and find funding. The Teachers' Wishlists is a place where educators and staff can create and post a list of desired merchandise, and visitors can purchase products from these lists for schools or nonprofit organizations. The Progressive Directory contains an index of approximately 1,000 San Francisco-area organizations related to "progressive activism and/or helping out disadvantaged people."

Explore More

So, now that you know about craigslist, you have another resource to check the next time you need a new refrigerator or want to buy a used motorcycle—except that you'll open your Web browser instead of your newspaper to do so. It won't cost you anything but your time, and you might be able to stock your home with those hard-to-find items that you haven't been able to locate elsewhere. That is, until family members object and post them for sale again ... on craigslist, of course. ■

BY HEIDI V. ANDERSON



AMD Athlon™ 64 3400+
512K L2 Cache
64-Bit Processor
Model# ADA3400AXBOX
\$245⁰⁰



AMD Athlon™ 64 3500+
Socket 939 512K
L2 Cache 64-Bit Processor
Model# ADA3500AWBOX
\$295⁰⁰



AMD Sempron™ 2600+
Socket A Processor 256K L2 Cache
Model# SDA2600BOX
\$88⁰⁰



AMD Sempron™ 2500+
Socket A Processor 256K L2 Cache
Model# SDA2500BOX
\$79⁰⁰



AMD Sempron™ 2400+
Socket A Processor 256K L2 Cache
Model# SDA2400BOX
\$65⁰⁰

* These model numbers indicate relative software performance among AMD processors.



AMD Athlon™ 64 Technology

- The only Windows®-compatible 64-bit processor
- Streamlines multitasking performance with HyperTransport™ technology, invented by AMD, which removes I/O bottlenecks, increases bandwidth and reduces latency
- Enhanced virus protection for the upcoming Microsoft® Windows® XP SP2
- Cool'n'Quiet™ technology offers performance-on-demand capability to reduce energy usage and enable a quiet environment for home computing



Hard Drives



Maxtor OneTouch II 300GB
7200 RPM External Hard Drive
USB/FireWire Model# E01G300
\$308⁰⁰



Hitachi 400GB 7200 RPM
SATA 150 8MB Buffer - OEM
\$395⁰⁰



Samsung 80GB 5400 RPM
Ultra ATA 100 8MB Buffer - OEM
\$149⁰⁰

Digital Cameras



Sony Cyber-shot® DSC-P93
5.1 MP 3x Optical 2x Digital Zoom
\$299⁰⁰

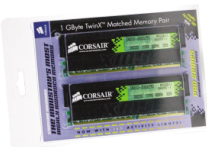


Canon PowerShot A95
5.0 MP 3x Optical 4.1 Digital Zoom
\$399⁹⁹



Olympus Style Verve
4.0 MP 2x Optical 4x Digital Zoom
\$349⁰⁰

Memory



Corsair XMS Xtra-Low
Latency 184-Pin 1GB (512MBx2)
DDR SDRAM PC3200
\$305⁰⁰



Kingston ValueRAM 240-Pin
512MB DDR2 PC4200 - OEM
\$145⁰⁰



Sandisk Cruzer Micro
512MB USB Flash Drive
\$45⁰⁰

Inputs & Outputs



Creative Inspire GD580 5.1
Speaker System 47 Watts RMS
\$161⁰⁰



Sennheiser PC150
High-power Stereo Headphones
\$55⁹⁹



Zippy EL-715 Electron
Luminescent Keyboard USB
\$38⁹⁹

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- 13,000+ customer testimonials
- "A" rating on ANY merchant ranking site

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Enhance Your Time Online

Tune Up Your Old Monitor

Problem: My several-year-old monitor is starting to show its age and isn't as crisp as it used to be. Is there something I can do to tune it up instead of getting a brand-new monitor?

Solution: Long before monitors burn out, their calibration can go way out of whack. Graphic designers and other visual pros often use expensive hardware to color-calibrate their monitors, but we found a no-cost source you can use to make your monitor's display look sharp again. MonitorsDirect Calibrator (<http://www.monitorsdirect.com/toolkit>) is a free test from this retailer site. MonitorsDirect says this test is "designed to help evaluate monitor quality, diagnose possible problems, and help properly adjust the display image." For you, that means no more guessing with the brightness and contrast controls.

How Fast Are Your Fingers?

Problem: Someone recently asked me how many words per minute I can type. Is there an online test that will rate my speed?

Solution: You should check out the TypingMaster Online Test (<http://www.typingtest.com>). You can vary the length of the test from one minute to three minutes, which gives you much more accurate results than other online tests that only clock one sentence at a time and extrapolate the results up to a minute.

Find Your Golf Handicap

Problem: My New Year's resolution is to get out and play more golf. How can I find out my handicap?

Solution: There are a bunch of free handicap calculators on the Web, but some of them require a registration login and others require the scores of as many as 12 games before their calculators can perform the necessary calculation. Instead, take a look at this small, unattractive but effective Golf Handicap Calculator (<http://www.csghnetwork.com/golfhcapcalc.html>), which bases its calculation on at least five rounds of golf. Plus, for those just beginning to track their stats, the site provides a link at the top of the page to its Single Round Handicap Calculator. Fore!

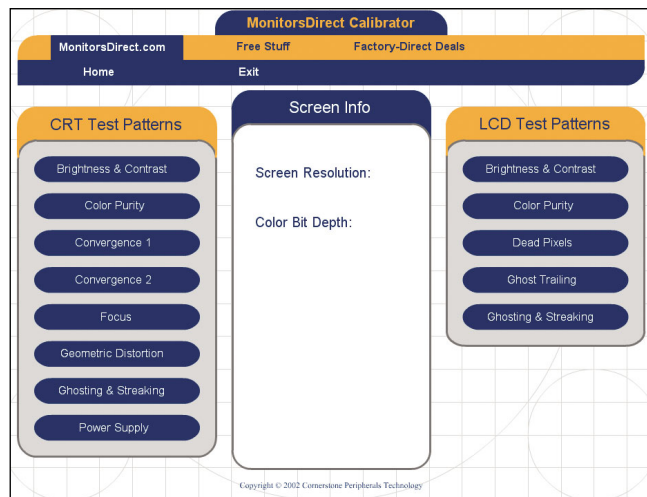


FactCheck.org, a site dedicated to truth, filters political speak through its analytical team of fact checkers.

Millions Of Pennies

Problem: These days, there's a lot of talk about federal spending that's in the billions of dollars, and a deficit that's in the trillions. How big is that?

Solution: Most of us know that 1 billion is 1,000 million



Monitor your monitor's well-being with a series of visual test patterns that help you adjust your display settings.

and that 1 trillion is 1,000 billion. Still, these amounts are hard for many of us to visualize, and that's how MegaPenny Project (<http://www.kokogiak.com/megapenny>) can help. With its illustrated steps, it leads you through an ever-increasing stack of little copper coins. MegaPenny Project also provides interesting statistics on every jump up in size (for

of measurement names for big numbers—all the way up to novemtrigintillion, which is a numeral 1 followed by 120 zeros. Now that's big.

Get Their Facts Straight

Problem: Even with the presidential election over, it's hard to keep track of how much the spin doctors are spinning. Can't someone hold these people accountable for what they say?

Solution: The Annenberg Public Policy Center of the University of Pennsylvania agrees with this notion of accountability for politicians. Thus, it started the Annenberg Political Fact Check (<http://www.factcheck.org>), also referred to as FactCheck.org. A non-partisan, nonprofit group that primarily targets voters, FactCheck.org tries to untangle the layers of deception—whether intentional or unintentional—in U.S. politics. Its articles regularly critique the factual accuracy of public statements (including TV ads, debates, speeches, interviews, etc.) from major political figures.

Open Range

Expand The Coverage Of Your Wireless Network

DRIVING DOWN THE HIGHWAY one sunny morning, you glance to your left and spy the most gargantuan, ghastly tree you've ever seen. A few sips of coffee later, you realize it wasn't a tree, but a shoddily camouflaged cellular tower.

Luckily, the wireless access points in our homes and small offices aren't so intrusive that we need to shove fake plants or other home décor around them. But while mobile phone companies effectively reach their clients by employing massive antennas that circumvent interference to get phone signals where they need to go, makers of WLAN (wireless local-area network) equipment often include puny antennas with their equipment that sometimes have difficulty reaching beyond walls and other obstacles.

We depend on WLANs to deliver fast network speeds wherever we need them, but that effective range isn't always available. Every house and office is different, and yours might be particularly troublesome when it comes to running a wireless signal throughout the premises. If you have trouble connecting to your network from the far (or not-so-far) reaches of your house or office or if the remote connection is slow as molasses, there are several steps you can take to improve your wireless range. Let's take a look at factors that affect range and how you can improve your network despite structural obstructions.



Enemies Of Range

In wireless networks, the farther you are from a wireless access point, the more the signal diminishes. Even if you're within the line of site to the access point with no walls in between, the strength of the signal will still decrease as you move farther away because access points don't emit and receive signals to and from infinite distances.

When you add obstructions to the mix, signal strength usually decreases even more significantly. One of the most effective wireless roadblocks is metal, which can degrade a wireless

signal even if you don't actually see the metal itself. For example, walls can contain nails, insulation with a foil sheath, and metal studs, all of which can negatively affect a wireless signal. Even the walls themselves can block signals running between an access point and an adapter, though your mileage could vary depending on the thickness of the walls and their ingredients (concrete, for example, tends to absorb signals more than wood or drywall).

The signals themselves can conflict with other signals floating around in your home. Because 802.11b and 802.11g products use the 2.4GHz radio band, their transmissions can interfere with other products using the same band, such as cordless phones and microwaves. Such conflicts not only degrade the quality of the wireless signal but also terminate the signal completely in certain cases. Although all wireless devices operating in the same radio band are designed to interoperate without trouble, this isn't always foolproof and can prevent your WLAN from delivering the range you desire.

If you're not receiving a signal where you'd like to, you know what problem you need to target. But problems with wireless range aren't always so

obvious, especially when the signal is present but simply degraded. You might be happy that you're receiving wireless access in a remote part of your home, but that doesn't mean you have to settle for slow throughput rates.

Before you tackle potential range problems, test your data transfer speeds at various locations throughout your house. Select a speed test linked from BroadbandReports.com (<http://www.broadbandreports.com/stest>) that's closest to your city or state. First, run the test from the computer that's directly connected to your access point to get a baseline speed and then run

the same test at remote locations throughout your home (or deck, yard, etc.). Take note of locations where the signal is most diminished or nonexistent because these spots are where you'll focus your attention when you expand your wireless range.

Solve Your Antenna Dilemma

We depend on antennas to capture signals traveling through air, whether we're receiving them on our mobile phones, car stereos, or cordless phones. Wireless networks also use antennas to both transmit and receive signals, and if your network isn't delivering the range you need, you might be able to use more powerful antennas to improve your signal. Antennas included with most wireless access points and network cards provide decent range in many home and office environments. These antennas are usually **omnidirectional**, which means they transmit and receive signals using a circular range that moves outward in every direction.

In other words, if you place your access point in a room on a far end of your house, its signals may not reach the other end of your house, but they could be reaching your neighbor's home. But even though it might make more logistic sense to place the access point in the center of your home to reach both ends of your house, this practice isn't always practical because that center point might be your kitchen, the living room, or even a bathroom.

Nonetheless, you can at least consider moving your access point toward a more central location, even if it remains in the same room. For example, if you currently situate your access point on a desk in the corner of a room, try moving it so it has a direct line of sight to the doorway. Even one less wall for wireless signals to travel through can have a positive impact on your range, so try small moves such as this before investing in extra equipment.

Also, because omnidirectional antennas on access points and adapters can swivel in different directions, you

can try turning the antenna so it faces a different direction. Although you probably won't see much of an improvement by moving the antenna, judging the path of wireless signals is a difficult endeavor, so you might just encounter some luck by employing small changes.

If these tweaks don't work, it might be time to upgrade the antennas to



If you have a D-Link router and can handle potential configuration problems, the DWL-G800AP extender can effectively broaden your wireless range.

something more powerful. Many antennas included with WLAN equipment have a wireless gain of 2dBi (decibels isotropic), but with an upgraded antenna, you can boost that gain tremendously. Most of today's WLAN products have removable antennas you can replace by simply unscrewing the existing antenna and screwing in a new one. If your equipment includes a removable antenna (or antennas), you should be able to buy a compatible antenna that provides more range than what you're using now. If you can't remove the stock antenna, consider a range extender, which we'll discuss later.

Some major manufacturers of WLAN equipment sell upgraded antennas that fit their equipment, so if you're looking to replace your antenna, first see what's available from the company that built your access point or adapter. Keep in mind that not all antennas fit all access points and adapters, even if they're all sold by the same manufacturer. Before you purchase an

antenna, make sure it works with your equipment because there's no universal connector for all antennas.

When you shop for antennas, you'll find plenty of omnidirectional models, but you'll also see directional antennas. Unlike the omnidirectional models that radiate the signal outward in all directions, directional antennas send the signal in just one direction. If you're unable to place your access point in a central location in your house, you might want to consider using a directional antenna that's pointed in the direction where you need more range, or you can even place a directional antenna at each end of your house. However, configuring two directional antennas to properly send and receive signals can be difficult.

If the manufacturer of your WLAN equipment doesn't sell compatible antennas for your devices or if you want to look at other options, third-party antennas are widely available. Because most small WLAN products use R-TNC (reverse-polarity TNC) or R-SMA (reverse-polarity SMA) connectors, chances are good you'll find an antenna that fits your equipment. Of course, these aren't the only two connectors, so if you're not sure what connector type your access point or adapter uses, contact the manufacturer before you buy an antenna. Third-party antenna vendors also might be able to help you determine what antenna type is compatible with your equipment.

Range Rover

Upgraded antennas can often solve mild range problems, but if you still can't obtain a decent signal, consider pulling out the big guns. Range extenders, also known as repeaters, can create a wireless bridge between your access point and remote computers, which extends the range of the access point far beyond its typical limits.

A range extender works by capturing signals from the access point and delivering them to a remote computer, and vice versa. This lets you place the

extender in a location where you usually receive a poor signal so the extender can receive the signal from your access point and “repeat” it in that area. Some access points also can work as range extenders, but a cheaper, more compatible option is to use a range extender developed to work exclusively with your equipment. For example, D-Link’s DWL-G800AP extender (\$89; <http://www.dlink.com/products/?pid=267>) works with its DI-624 wireless router (\$85; <http://www.dlink.com/products/?pid=6>), and the Linksys WRE54G extender (\$79.99; <http://www.linksys.com/products>) works with the Linksys WAP54G access point (\$64.99) and WRT54G (\$59.99) and WRT54GS (\$79.99) wireless routers.

Although range extenders can help expand the wireless range throughout your home, they do have pitfalls. First, they can be difficult to configure, even if you follow setup instructions exactly as they’re printed. Part of this problem is caused by incompatibilities between the extenders and varying versions of router models, so if you’re considering buying a range extender, make sure it not only works with the model of your access point but also with the access point version or revision (for example, Version B, Version C, and so on). Check with the manufacturer if you’re not sure exactly what you’re using. If you determine that your access point is compatible with the extender and decide to buy it, be prepared for a rough ride during the installation. Many users report problems (and must make calls to tech support) trying to get the devices to work properly.

Another problem with range extenders is the potential loss of throughput. Due to the process of receiving the signal and repeating it, range extenders can drastically reduce the speed of the data traveling back and forth, even by as much as half or more. If you need those remote locations for performing bandwidth-intensive tasks, a range extender may not be sufficient, though it’ll probably give you a better connection than you previously had.

You’ll also need to make room for the range extender. Most units are smaller than your typical wireless router, but you’ll still need to place your range extender near an electrical outlet and in a location where it can adequately receive the signal from the access point. One convenient solution is NETGEAR’s WGXB102 wall-plugged extender kit (\$149.99; <http://www.netgear.com/products>), which plugs directly into an outlet. Plus, NETGEAR claims the extender works with wireless routers from any manufacturer.

What We Found

To solve our own range quandaries, we tested a variety of range extension products, including the Linksys HGA7T (\$59.99) and HGA7S (\$59.99) 7dBi antennas, the Linksys WRE54G range extender (\$79.99), and the D-Link DWL-G800AP range extender (\$89).

The high-gain antennas did a nice job of extending the range both across the same floor and to floors above and below our wireless router. Not only did the antennas help with the range, but they also boosted the strength of the signal in areas where the signal previously existed but was weak. Although you’ll probably pay nearly half of what you paid for your wireless router to upgrade the antenna, the increase in range and strength seems worth the cost.

Unlike the antennas, which just required a few moments to install, the Linksys and D-Link range extenders resulted in several headaches during the installation and configuration process. However, once installed and properly configured, they both performed well, lending range to areas we never thought possible (such as two floors below the router). And the extenders required no further configuration after that initial period (unless we changed settings on the router).

Solutions Big & Small

Repositioning your access point, upgrading your antennas, or installing



Although its configuration can be a bear, the range extension delivered by the Linksys WRE54G helps deliver coverage where you never previously had it.

range extenders can help strengthen your network and give you faith that you’ll obtain a connection anywhere you’ll need it. But if these measures still aren’t enough, consider replacing your access point with a wireless router from ParkerVision. We gave the ParkerVision WR1500 router (\$199.95; <http://www.parkervision.com/products/index.php>) and WLAN1500 PC Card adapter (\$99.95) a test spin. We were pleasantly surprised with the real-world wireless range offered by the ParkerVision products because the range easily matched the ranges delivered by D-Link and Linksys routers using range extenders. The downside? You’ll pay more for the ParkerVision router and adapters than you will for a router, range extender, and adapters from D-Link, Linksys, or NETGEAR.

In any case, don’t assume you have to pay anything to extend your wireless range because a simple shift of your access point’s location could solve your problems. If not, shop around for antennas that work with your access point, compare specifications and prices, and choose one that fits your wireless needs and budget. If you still have no luck, then consider shelling out more dough for a range extender or equipment that boasts better-than-average coverage, such as the ParkerVision products. ■

BY CHRISTIAN PERRY



Winter Wonder E-Land

CCSAA

<http://www.xcski.org>

We love crisp, chilly air, snow, and skis, but we're not so excited about steep mountains, icy slopes, and unpredictable chair lifts. Thankfully, there's a sport for those of us who don't appreciate 30-degree angles: cross-country skiing (or XC skiing to those in the know). The CCSAA (Cross Country Ski Areas Association) boasts daily snow reports for popular cross-country ski areas in dozens of states. The reports also indicate trail types, hours of operation, and whether the trails are open or closed. You can use the XC Directory to track down ski equipment dealers, resorts, and trails that permit dogs.

USFSA

<http://www.usfsa.org>

If you follow figure skating year-round and scoff at people who tune in only during the Olympics, check out the USFSA (U.S. Figure Skating Association) Web site. The main page includes the latest skating news and links to exhibition photos and the site's online store, which offers apparel and, of course, a stainless steel travel mug that keeps your hot chocolate hot (you won't find any USFSA koozies here). If you want to skate like a pro or have a family member who dreams of ice skating, click the Learn How To Skate link at the top of the main page and use the Event Search to find out when and where the USFSA will present its next Basic Skills Program.

SnowSpeeders.com

<http://www.snowsPEEDERS.com>

What's better (in the eyes of a kid, at least) than a BMX bike? A Snow-BMX, complete with glass-reinforced boards and a special freestyle seat that lets the rider perform tricks. Of course, even a fine-tuned, \$199.95 racer can't prevent occasional tumbles, so SnowSpeeders.com also offers protective gear, such as helmets. The online retailer has plenty of sleds for smaller riders, including inflatable toboggans and tubes, the ever-popular saucer, and a special kit that lets you turn your street scooter into a snow scooter.

The Inquiry Net

<http://www.inquiry.net>

Anyone who has taken a snowball in the face knows how important it is to build a decent snow fort. If you're new to the snow fort building business, take some advice from serious fort builders: Boy Scouts. Inquiry.net has tons of Boy Scout information, including Dan Beard's instructions for building solid forts and waging snowball war. To find the winter articles, click Winter Activities and Snowball Warfare. This Web site also has other information about Boy Scouts, including Ideals and Leadership sections.

National Weather Service

<http://www.weather.gov/os>

Whether you're planning a hike or drive, take a look at the National Weather Service's Web site to avoid

surprise weather conditions. Winter weather is particularly dangerous, so the Office Of Climate, Water, And Weather Services offers plenty of information about snow, ice, and strong wind hazards. Click Winter under Weather Awareness to find winter safety information and descriptions of some of our nation's worst storms.

NYCtourist.com

<http://www.nycTOURIST.com>

Whether you're planning to celebrate the New Year in the Big Apple or from the comfort of your couch, you'll like NYCtourist.com's information about the upcoming New Year celebrations and an online photo album of previous New Year's blasts. You'll also find advertisements for large NYC New Year's Eve parties. Click New Year's Eve! under Find Out About to view the New Year's section.

Road & Travel

<http://www.roadandtravel.com>

Before you take a long road trip through wintry climates, take a look at *Road & Travel* magazine's winter car care tips. To view the site's winter safety articles, click Car Care & DIY under Automotive and then click Archives. Scroll to the bottom of the category list and then choose an article under Winterizing Your Car. The brief articles include basic information about preparing your car for chilly weather and about driving in poor conditions.

That's News To You

Finding the appropriate Usenet discussion group to match your interests can be a monumental task. So each month, we scour tens of thousands of newsgroups and highlight ones that delve into popular topics. If your ISP (Internet service provider) doesn't carry these groups, ask it to add the groups to its list. This month we put on heavy jackets and weather the winter storm.

rec.skiing.resorts.north-america

Planning a ski trip but don't know where you'll rest your skis when the sun goes down? Don't invest in an expensive vacation without first talking with (well, messaging) people who have already stayed at the resorts you're considering.

.....

rec.gardens

Not all plants take well to freezing temperatures, heavy snowfalls, and strong winds. If you planted anything this year, you may want to check with users who successfully help their gardens weather the winter. This helpful crowd has plenty of advice to give.

Share The Wares

Some of the best apples in the online orchard are the free (or free to try) programs available for download. Each month we feature highlights from our pickings. This month, we bring the outside in with a winter screen saver and we download a beach screen saver to remind ourselves that the cold won't last forever.

Beach Tranquility

<http://www.appleblossomart.com>

If you'd rather look at warm, clear waters and sandy beaches than snowflakes, head to Appleblossom Art and download Beach Tranquility, which displays a variety of beach scenes that feature plenty of blue skies, blue water, and palm trees. As if that weren't enough to soothe your soul, the screen saver plays music. Of course, you won't need to listen to tunes whenever your screen saver turns on; you can disable the music feature and change the speed of the program's scene transitions by right-clicking your Desktop and selecting Properties, Screen Saver, and Settings. All of the Web site's screen savers are free, but the site does link to several nonprofit organizations that accept donations.

Holiday Snowflakes Screen Saver 1.2

<http://www.microsoft.com>

Although Microsoft offers many Windows extras via its for-sale Plus! packages, it also occasionally tosses some nifty freebies onto its giant Web site. The Holiday Snowflakes Screen Saver has a digital flair; large, ever-changing snowflakes dance across a swirling colored background while small flakes drift from the top of the screen. If you have Windows XP (Home or Pro), visit <http://www.microsoft.com/windowsxp/downloads/desktop/screensavers.mspx> and then download Screensaverfunpack.exe. Once you download the file, double-click it to start the installation. The Windows XP Winter Fun Pack includes two screen savers: Holiday Snowflakes and Amazing Windows XP. To enable either screen saver, right-click the Desktop and then click Properties. Click the Screen Saver tab and then select the appropriate screen saver from the drop-down menu. We were surprised to find that the screen saver doesn't include any extra settings (as Beach Tranquility does), but you can still use the Display Properties' Screen Saver tab to choose the number of minutes your system should wait before launching into the screen saver, as well as choose a password

that displays whenever someone stops the screen saver.



No snow? Download your own in the form of Microsoft's Holiday Snowflakes Screen Saver.



For Work & Play

A Smorgasbord Of The Top Productivity & Entertainment Freeware

A day at the ballpark to watch your favorite slugger can cost more than \$150 at most stadiums. You easily can spend half that much for a couple of meals, drinks, and a tip at a typical family restaurant. Even taking your family to a night at the movies can set you back a few Jacksons.

Fortunately, it's possible to find cheaper entertainment, even if your idea of having fun is sitting at a desk and being productive. You simply have to know where to look and we suggest starting your search online.

Before you do anything, however, we strongly encourage you to update your antivirus software and install the latest edition of Ad-aware (free; <http://www.lavasoft.de>) as a means of protecting your system from invasive malware. Before installing anything, be prepared to scan the programs you download for the presence of viruses, worms, adware, and spyware. And if you do find that one of the downloaded programs you already installed is hosting unwanted guests, use the antivirus or Ad-aware utility to remove them from your system.

Web Browsers

Serving both productivity and entertainment purposes, the Web browser is probably the most important piece of software you own (other than the OS [operating system], of course). You can use it to track industry headlines, request product information, verify facts and statistics, file consumer complaints, monitor financial markets, obtain tax forms, and enhance your overall output and efficiency. You also can use it for playing games, reviewing show times, purchasing tickets, booking hotel rooms, checking sports scores, and planning or participating in other activities.

Internet Explorer

For nearly a decade, every Windows version has come bundled with Microsoft's browser. But you don't have to buy a new OS to get the browser; download it free from <http://www.microsoft.com/windows/ie>. IE features cutting-edge functionality and ubiquitous acceptance, making it the browser preferred by three out of four users today.



Firefox

Stable, sleek, and secure, Mozilla's Firefox (<http://www.mozilla.org>) is quickly emerging as the favored alternative to Internet Explorer. The open-source browser features tabbed browsing, integrated pop-up ad blocking, a built-in Google search bar, and multiple customization options, among other things. Firefox is currently available in beta (pre-release) format only.

Email Clients

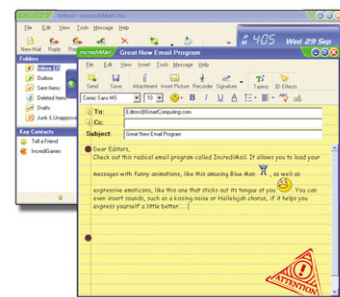
Those who bemoan the demise of letter writing must not have email accounts. Personal correspondence is alive and well thanks to the widespread acceptance of electronic messaging. Sure, spelling and syntax and script have suffered as users tap out micro-missives on their keyboards, but the right email client can compensate for such shortcomings and ensure that each message gets your point across.

Thunderbird

A beta companion to Mozilla's Firefox, Thunderbird (<http://www.mozilla.org/products/thunderbird>) is a full-fledged email client that provides a spam filter, a spell checker, message encryption, digital signatures, and support for multiple accounts. Better yet, you can personalize its appearance and functionality by taking advantage of the customizable toolbars, the catalog of downloadable themes, and numerous extensions (add-on applications) that add unique capabilities to the client.

IncrediMail

IncrediMail (<http://www.incredimail.com>) is more like stationery than software. You can stylize your outgoing messages with the dozens of backgrounds, animations, emoticons, and sounds that come bundled with the program. And when you grow tired of those, follow the provided links to download more. The program also features a junk filter; 3D effects that complement common email actions, such as sending and deleting messages; a voice-message recorder; handwritten signatures; and support for multiple accounts.



IncrediMail is a free email client that includes dozens of animations, backgrounds, emoticons, sounds, and other embellishments.



Personal Finance

Remember when the most popular investment vehicle was an interest-bearing savings account? When only the very rich and highly educated knew anything about the stock market? When workers relied on company-managed pensions to support their retirement? When you paid your bills with a stamp? Everything about personal finance has changed in the last 20 years. Fortunately, an assortment of free online tools is available that can help you make the most of your money.

IngenMoney

IngenMoney (<http://www.ingenlab.com/igmoney.html>) is designed to help you accomplish the elusive task of living within a budget. Simply enter your expected income and expenses on the provided calendar, and then watch as the program identifies the amount of pocket money you have left over. As long as you limit your incidental spending to the amount that IngenMoney specifies, you'll never find yourself living in the red.

InvestorIntelligence

Amateur investors who want to stay current on financial happenings can spend hours poring over the online editions of various business-related news and information sites. Or they can install InvestorIntelligence (<http://www.slideup.com>), a free utility that delivers pertinent alerts to your Desktop from more than a dozen sources, including TheStreet.com, Market Wire, Bankrate.com, and *Kiplinger's Personal Finance*. The program can monitor as many as 20 keywords and trigger phrases that you select.

AceMoney Lite

For individuals with simple financial situations, AceMoney Lite (<http://www.mechcad.net>) provides a no-cost collection of tools for managing a single account. The program will categorize income and expenses, automate repeat transactions, chart cash flow, calculate exchange rates, and track portfolio values. Users with complex financial situations should upgrade to the shareware version of AceMoney (\$45) or invest in a retail product such as Intuit's Quicken or Microsoft's Money.

Office Productivity

It takes money to make money—or so they say—but you wouldn't know it by the abundance of free productivity software available online. Aside from the numerous Microsoft updates, which add new

features to and enhance the old features of Microsoft's various office programs, you'll find several freebies that can help you increase your effectiveness and maximize your efficiency.

Adobe Reader

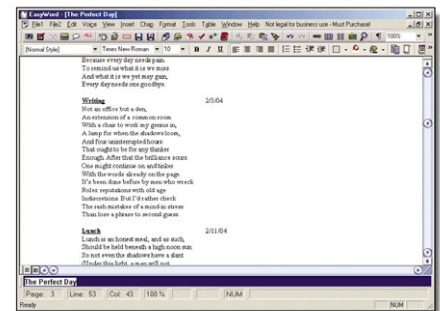
Content providers know the easiest way to share data across multiple platforms is by putting it in PDF (Portable Document Format). That's why you need Adobe Reader (<http://www.adobe.com/products/acrobat/readmain.html>). This free utility, from the original developers of the format, lets you view and print any file with a .PDF extension.

EasyOffice

It sounds too good to be true. EasyOffice (<http://www.e-press.com>) combines a word processor, spreadsheet, contact manager, presentation program, bookkeeping utility, database, file compression utility, email client, backup utility, dictionary, and calculator in one free downloadable suite. The only catch? Its 96.9MB download may test the limitations of your Internet connection. Consider it the price you pay for free productivity.

OpenOffice

A West Coast software developer releases a free-ware alternative to a popular product in hopes of stealing market share. The offender? No, not Microsoft; it's Sun Microsystems. The company's OpenOffice (<http://www.openoffice.org>) suite features a text editor, a spreadsheet application, a database program, presentation software, and drawing tools, all of which are built on the same proven code that underlies Sun's popular StarOffice suite (\$79.95; <http://www.sun.com>).



EasyWord, part of the free EasyOffice productivity suite, features a spell checker, a voice reader, and support for 3D word art. Not bad for a free word processing app, eh?

Games

If it's games you're after, it's games you'll get on the Internet. The only trick is deciding what type of game you want to play. Indeed, anyone who tries to determine what the best freeware games are must recognize that personal preference plays a major role in the decision. We browsed through dozens of quality games and picked five that made an impression on us. None of the following compare with the latest razzle-dazzle, disc-based offerings found at your favorite computer store, but they will provide hours of entertainment.



Capman

No gaming collection would be complete without Pac-Man or one of its souped-up knock-offs. We prefer Jani Immonen's Capman (<http://www.jani-immonen.net/capman>) to the arcade staple. Not only does the game let you chase and flee around a dotted grid, but it also gives you the option of collecting weapons that you can use to smite your hyperactive foes.

Mario Forever

Ever since Mario made his digital debut in Donkey Kong, we've had a soft spot in our hearts for the jumping plumber. This free Mario clone (<http://buzg.scene.pl>) offers nostalgic gamers a fun trip down memory lane. For users who just want a quick Mario fix, check out Super Mario (<http://www.acid-play.com/download/super-mario>) and its 60.7KB download instead.



Mario takes on turtles, fireballs, and evil reptiles to save the people of Toadstool in Mario Forever.



Worm Wars 3 pits armies of worms against legions of ants in jungle-themed guerilla warfare.

Worm Wars 3

No, this action-packed game has nothing to do with infectious code. Worm Wars 3 (<http://www.acid-play.com/download/worm-wars-3>) pits helmeted earthworms against malicious ants in an ongoing war for garden supremacy. The only way to win is by building a superior military complex while directing your army against red ants, black ants, and other creatures.

Soldat

Arguably one of the most popular multiplayer action games on the Internet today, Soldat (<http://www.soldat.prv.pl>) lets you challenge another online gamer in a fight-to-the-virtual-death combat. Anyone can play the game for free, but users who register for \$9 can create custom profiles, create custom interfaces, and use its built-in MP3 player.

Multimedia Players

The holy trio of players—Windows Media Player, Apple QuickTime, and RealPlayer—are still the overwhelming favorites. Sure, you could use a less celebrated product, such as Ashampoo Media Player (<http://www.ashampoo.com>) or Zoom Player (<http://www.inmatrix.com>), but what's the point? You're going to need the trio to view most of the online content anyway.

Windows Media Player

As it did with OSes and Web browsers, Microsoft entered a market that other companies dominated and quickly overpowered them. Windows Media Player (<http://www.microsoft.com/windows/windowsmedia>) was not the first multimedia player to offer audio and video playback as well as disc **burning** (recording digital data to an optical disc) and track **ripping** (copying data from an optical disc to a digital storage device, such as a hard drive or another optical disc). But its intuitive design, universal acceptance, and robust capabilities have quickly made it a must-have for any computer user who needs access to multimedia files.

RealPlayer

RealNetworks got its start developing audio playback software for the PC. Now its keystone product, RealPlayer (<http://www.real.com>), supports a variety of audio and video file formats, including proprietary QuickTime movies and Windows media files. However, you'll have to upgrade to RealPlayer Plus for \$19.95 if you want advanced disc-burning and recording capabilities.

QuickTime Player

For more than a decade, platform-independent QuickTime Player (<http://www.apple.com/quicktime>) from Apple has delivered solid video playback performance to Mac and PC users. Things aren't about to change just yet. As long as the QuickTime format remains popular with amateur and professional videographers, this player will maintain its spot as a necessary multimedia add-on. If you want to create movies as well as view them, you must upgrade to QuickTime Pro for \$29.99.

Know When To Spend

For many users, saving money is what freeware is all about. And why not? It makes little sense to pay \$50 for the hottest game around if you want nothing more than a diversion from the stress of a long day at the office. But sometimes freebies just don't cut it, especially when it comes to productivity. Users needing straightforward business and financial capabilities will find freeware office suites and personal finance applications adequate for their basic needs. Users dealing with complex situations, however, will discover that the time-saving features and enhanced functionality of retail software is well worth the money. ■

BY JEFF DODD



The Right Tool For The Job

A Collection Of The Finest Free System Utilities

Unlike their 20th century predecessors, today's PCs have more than enough processing power, memory, and hard drive capacity to accommodate virtually any task you want to throw at them. Indeed, when it comes to computers these days, the limiting factor isn't the components but the code. Things such as virus infections, outdated Registry values, unsupported files, pop-up ads, and spam limit your PC's usefulness and wreak havoc with personal production. Fortunately, you can rectify most of these problems with help from a plethora of downloadable programs—many of which are free—that are currently available on the Internet.

The Best Defense

Of course, you cannot rectify anything if the programs you download contaminate your PC with viruses, spyware, and other species of malicious code. That's why it's prudent to start your collection of utilities by focusing on those that endeavor to secure your system from outside intruders. But first, make sure you visit Microsoft's Windows Update site (<http://windowsupdate.microsoft.com>) and obtain all of the relevant critical updates listed there. These updates will include security patches (pieces of code inserted into another program to repair defects) designed to fix known vulnerabilities in the Windows OS (operating system).

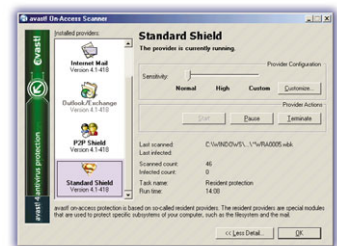
Antivirus utilities. Malicious code is everywhere these days. You cannot surf the Web, peruse your email messages, or download files from the Internet without exposing your system to infection from contagious viruses, worms, and/or Trojan horses. The most effective defense against these digital invaders is an up-to-date antivirus utility, such as Symantec's Norton AntiVirus (\$49.95 download or package; <http://www.symantec.com>) or McAfee VirusScan (\$49.99 download, \$59.99 package; <http://www.mcafee.com>). These programs not only identify contaminants but also remove them from your PC and try to repair any damage that was left behind. For optimum protection, we strongly encourage you to invest in a full-fledged antivirus utility and update it on a regular basis.

Having said that, we should point out that there are a pair of free standalone antivirus utilities currently available online. These programs, ALWIL Software's avast! 4 Home Edition (http://www.asw.cz/eng/avast_4_home.html) and Grisoft's AVG Anti-Virus FREE Edition (<http://free.grisoft.com/freeweb.php>) do a reasonably good job of protecting your system from malicious threats. They will scan each file you open and each message you receive for the presence of malicious code. Each program is capable of performing scheduled and on-demand virus scans; they also will automatically deliver virus definition updates as they become available.

The most significant drawback to using a free antivirus utility involves the manner in which the utility handles the viruses that it finds. Both of these free programs will isolate the viruses to prevent further infection but are limited in their ability to repair damaged files. You will have to upgrade to the shareware versions of either product in order to receive full virus-repair functionality. Another drawback is that these free programs are available only to noncommercial home computer users. Businesses, nonprofit organizations, and schools must pay to use the programs.

Spyware and adware detection. Many digital miscreants prefer to operate in spyware and adware these days, and it's easy to understand why: Enterprising crackers who design programs for tracking online behavior can make a killing on targeted ads. Fortunately, you can protect your system from these ruthless invaders without spending a penny. All you need is one of two programs: Ad-aware (<http://www.lavasoft.de>) or Spybot Search & Destroy (<http://www.security.kolla.de>). Some experts have advised users to install *both* of the utilities and noted that any conflicts between the two can usually be resolved.

Once installed on your system, Ad-aware and Spybot Search & Destroy will identify a variety of malware, including browser hijackers (programs that change your personal browser settings,



The simple user interface of avast! 4 Home Edition makes it easy for users to assess system security.



To better protect your system from spyware and other intrusive code, Spybot Search & Destroy will create a Registry backup so that it can easily restore damaged settings if necessary.



including the start page), **intrusive data miners** (programs that cultivate personal information from your computer and transmit that data to an unauthorized third party), **dialers** (programs that enable an unauthorized third party to access on-line content through your dial-up connection), and **keystroke loggers** (programs that keep a record of which keys you press and transmit this record to an unauthorized third party). The programs can neutralize these threats and remove them from your system. They also can prevent potential threats from embedding themselves on your PC in the first place.

They also can prevent potential threats from embedding themselves on your PC in the first place.

Firewalls. Another necessary piece of security software every user should have is a firewall. A firewall monitors the traffic traveling in and out of your system. It allows re-

quested data into your system but keeps unauthorized predators out. More importantly, a firewall can alert you when programs installed on your system try to send outgoing messages that may contain personal information.

Windows XP comes equipped with a basic firewall, but users of other OSes will have to install their own. For most users, we recommend Kerio Personal Firewall (<http://www.kerio.com>), Sygate Personal Firewall (<http://smb.sygate.com>), or Zone Labs' ZoneAlarm Firewall (<http://www.zonelabs.com>). Each features dependable protection for a dial-up or broadband Internet connection, an intuitive interface for easy management, and logging capabilities for tracking incoming and outgoing traffic. However, these free firewalls typically won't block pop-up ads or allow remote network access as most retail products do.

As is the case with antivirus utilities, free firewalls are designed to protect only individual non-commercial home computer users. You should plan on purchasing the professional edition of each firewall if you have a network, require remote connectivity, or desire personal technical support service. You can purchase the shareware editions of each firewall mentioned here for \$40 to \$45.

System Performance

Each Windows OS features a number of integrated system maintenance utilities. Most of these utilities, including ScanDisk and Disk Defragmenter, revolve around drive

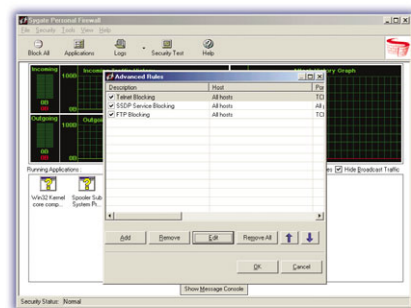
maintenance. For optimum system performance, you should run these utilities on a regular basis. You also should invest in a few complementary utilities that can help you make the most of your PC.

Registry optimization. The Windows Registry is a database of personal preferences and system settings. Every unique aspect of your PC, from the color of the Desktop to the order in which recently opened documents are listed in an application's File menu, is determined by a hexadecimal code listed somewhere among the Registry's countless **keys** (folders of related settings) and **values** (individual settings). Messing with the Registry is risky business, as one incorrectly configured value can shut down your system for good, but it's often necessary to obtain optimum system performance.

Users who like to sample numerous programs, for instance, can improve system speed and gain valuable storage space by running a Registry optimization utility (also referred to as a Registry cleaner). Such a utility rids the Registry of outdated keys and values left behind by old software. Most retail system maintenance suites include a Registry cleaner among their offerings, but it's possible to obtain a standalone Registry cleaner at no charge. Two of the best are TweakNow RegCleaner (<http://www.tweaknow.com>) and ToniArts' EasyCleaner (<http://personal.inet.fi/business/toniarts/ecleaner.htm>). These programs will eliminate Registry values that refer to outdated files, obsolete shortcuts, duplicate files, temporary files, and other system residue.

Each of the utilities includes an undo feature so that you can reverse the effects of an erroneous deletion. Nevertheless, you should verify that you have a full Registry backup on hand before using these or any Registry cleaner. (*Smart Computing* subscribers can access the "Back It Up" sidebar that accompanies the "Register Here" article at <http://www.smartcomputing.com/lisapr03/registrybackup> for information about which backup options are available for various Windows OSes.)

You also should keep in mind that, owing to the idiosyncrasies of each individual computer system, a Registry optimization utility may create more problems than it solves. If the utility incorrectly identifies a necessary value as an obsolete one (because of a programming error committed by the author of another application installed on your PC, for instance), it could create significant problems for your computer. The odds of this



Sygate Personal Firewall offers adequate protection for an individual computer connected to the Internet. You can even use it to set up simple rules that dictate the way the utility monitors your system.



happening are small, but a situation such as this is still possible. Proceed with caution.

File conversion. Thanks to developments in networking technology, the process of moving data files from one system to another has become a relatively painless procedure. Now all you need is a utility that will convert those peripatetic files into formats your PC can read. Unfortunately, we were unable to identify a top-quality freeware program that could convert a wide variety of file formats. As a makeshift solution, we recommend downloading JetAudio Basic (<http://www.jetaudio.com>), which recognizes all of the major audio formats for audio file conversions; OmniFormat (<http://www.omni-format.com>), which recognizes more than 75 file formats for image file conversions; and the Pdf995 printer driver (<http://www.pdf995.com>) for converting text files to PDF (Portable Document Format) files. (NOTE: You must download Pdf995 in order to use OmniFormat.)

Internet Utilities

The value of the Internet depends—to a large extent—on the quality of the Internet-related software you choose to install on your PC. In addition to a Web browser, which lets you access a vast body of online content, you may choose to sample additional utilities that can help you retrieve the information you need and avoid the data you don't need.

Combo search tools and pop-up stoppers. Few freeware utilities can increase your online productivity like an add-on toolbar. This type of toolbar positions itself neatly at the top of your browser window where it can block pop-up ads around the clock and provide unfettered access to a keyword search field. The best add-on toolbars, Google Toolbar (<http://toolbar.google.com>) and Yahoo! Toolbar (<http://companion.yahoo.com>), come from the biggest search sites on the Web. Users who have Yahoo! accounts will benefit most from the latter, which offers one-click access to Yahoo! Mail, bookmarks, shopping areas, as well as a personalized My Yahoo! home page.

Spam filter. Despite the efforts of congressional lawmakers to minimize the torrent of unsolicited email ads, spam is as prevalent today as ever. You can minimize the inconvenience caused by the never-ending stream of unwanted messages by implementing a spam filter. If it's

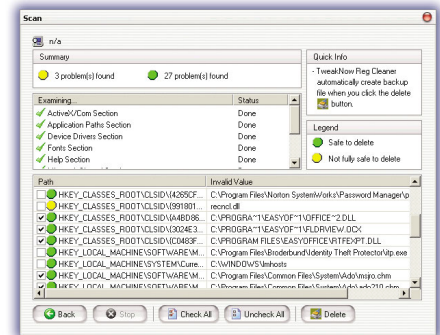
available, we suggest taking advantage of the server-side filter your ISP (Internet service provider) provides. You then can bolster your protection by downloading a free client-side spam filter from the Web.

One of the best is DigiPortal Software's ChoiceMail Free (<http://www.digiportal.com>), which works by utilizing a whitelist that accepts only messages sent by individuals identified in your address book. The utility requires unrecognized senders to verify their identities before it will deliver their messages. The verification process represents a minor inconvenience to new friends and colleagues, but it will eliminate the vast majority of unsolicited messages that come your way. The freeware utility supports any POP3 (Post Office Protocol 3) account. A shareware version of the product also is available for Web-based email for Yahoo! Mail, Hotmail, MSN (The Microsoft Network), and America Online accounts.

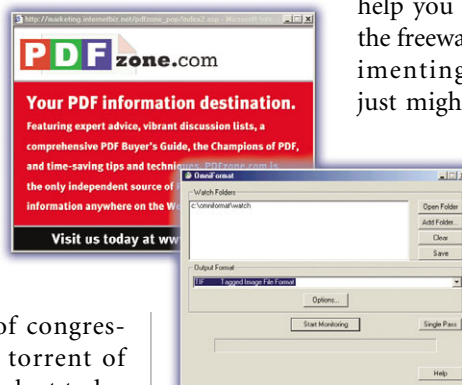
Freeware & Free Trials

In addition to the freeware titles listed above, the Internet also hosts an abundance of trialware (shareware applications you can sample for free for a limited period of time). Trialware is great because it lets you try out full-fledged shareware programs, which typically offer more features and functionality than their freeware counterparts, before you make a decision about whether they're worth your money. They also help you determine the value of the freeware you use. After experimenting with trialware, you just might find that a particular freeware program works better than a version you'd have to purchase. ■

BY JEFF DODD



TweakNow RegCleaner demystifies the task of cleaning the Registry by identifying problems and asking you which ones you want it to address. We suggest that you delete some invalid values, reboot your system, recheck for problems, and then delete some more when you feel it's safe to proceed.



OmniFormat makes file conversion as easy as a drag and a click. But like many freeware apps, OmniFormat also requires you to view pop-up ads as you use it.



Gratis Service

A Look At The Best Free Online Services

As the Web grows ever more commercialized, it's becoming increasingly difficult to find free services that are actually worth the time it takes to use them. Even when you do find a new calculator or photo-sharing site that seems worthwhile, there's inevitably a catch that makes your find worthless.

Yet in this age of the pay-first, use-second Web, there remain several free gems that raise the bar when it comes to online service. We tested loads of services and came up with a collection that we think represents the best in each of several categories. You might already use some of these services, but if you don't, give them a shot and see why we think they're the best at what they do.

Maps & Directions

Online map and directions services continue to endure growing pains, but MapQuest (<http://www.mapquest.com>) remains your best bet for accurate directions.

The screenshot shows the MapQuest website's 'Driving Directions' page. It features a navigation bar with links like 'FIND IT', 'MAPS', 'DIRECTIONS', and 'YELLOW PAGES'. The main content area has two columns for inputting a starting address and a destination address. Each column includes fields for 'Address or Intersection', 'City', 'State/Prov.', and 'ZIP/Postal Code'. There are also 'OR Recent Searches' dropdown menus and a 'Get Directions' button at the bottom.

MapQuest can simplify your quest for directions with its slick, refined interface and automatically saved searches.

This site has more than eight years of online mapping experience under its belt, and its easy-to-use interface reflects that. Compared to other mapping sites, MapQuest seems to deliver

more logical directions instead of directing you from Point A to Point B as quickly as possible, regardless of what you'll drive through to get there (we're looking at you, Yahoo!). Plus, you can simply click a button to reverse the directions for the trip home. MapQuest automatically saves recent searches so that you can access them either from the starting or destination address field without signing in.

Although we like MapQuest the best, we're also keeping an eye on Map24 (<http://www.us.map24.com>). This amazingly cool, Java-enabled service not only calculates typical text directions, but it also generates a powerful Java map that you can zoom in to or out of for more or less detail. Although some of the service's data is a bit

outdated, Map24's unique approach to online mapping makes it a hot prospect to watch.

Photo Sharing

There are plenty of free online photo-sharing services, but none offer the power, ease, and flexibility of Kodak's Ofoto (<http://www.ofoto.com>) service. Ofoto lets you share your online photos with friends and relatives by emailing them a link that connects them to your photo albums. Along with viewing your albums, people can make comments and even order prints, but you retain full power over your pictures and have the ability to show only the pictures you want people to see. Ofoto grants you free unlimited storage for a year from your first upload. After that, if you or anyone else makes a purchase from your uploaded photos (even a single print), your free storage automatically extends for another 12 months (if it was someone else who made the purchase, both your account and their account are extended).

Online Calculators

Although you'll need to deal with occasional pop-up ads, it's tough to beat the free calculator selection at Calculator.com (<http://www.calculator.com>). The site offers a nice variety of powerful calculators that cover just about every mathematical category you can imagine. In addition to its standard, fractions, scientific, and graphing calculators, you'll also find financial calculators for loan, lease, and mortgage calculations, as well as unit converters, temperature converters, currency converters, and more. Some of the site's more popular calculators are Java-driven, complete with colorful buttons, printable tapes, and other features.

Travel

Most of you know by now that you can find great travel deals online, whether directly through the airlines and hotels themselves or through third-party travel sites. But to find the best deals, it pays to check as many sites as possible to find the lowest prices. Enter SideStep (<http://www.sidestep.com>), an invaluable service that combs through data from travel providers (including Holiday Inn Hotels & Resorts, JetBlue Airways, and others), online agencies (such as Orbitz), and consolidators (such as Hotels.com) to find the best possible deals. If you're a diehard fan of Expedia, Travelocity, or another travel site, you can



compare SideStep's choices directly against results from those sites, so you'll know who really has the lowest fares. Then, when you find a price you like, you can click the result to go directly to the Web site of that particular provider or agency.

Translation

Free online translation is still a mixed bag, but if you need a word, sentence, or phrase translated quickly, visit AltaVista's Babel Fish (<http://world.altavista.com>). This translation service tends to be a little more accurate than other free services and features a no-nonsense interface that's simple to use. You'll find a large selection of languages, an on-screen "virtual keyboard" that lets you enter accented or Russian characters, and a Web page tool that translates individual Web pages (up to 10KB in size).

Computer Shopping

Whether you need a complete computer or just a video card, it pays to check Price Watch (<http://www.pricewatch.com>) for the best available deal. For nearly 10 years, this service has provided real-time pricing information on computers and components from resellers across the country, with loads of categories that help you narrow your search. Keep in mind that because Price Watch serves only as a price search engine, you shouldn't necessarily trust any reseller returned in the results. Before you make a purchase based on a price you found on Price Watch, check Reseller-Ratings.com (<http://www.resellerratings.com>), another useful service that features thousands of user reviews on more than 6,000 resellers.

Online Storage

Unless you own and carry a USB (Universal Serial Bus) key drive, it can be tough to carry large, important files and programs with you everywhere you go. But with an online storage service, you can leave these files online and access them from any computer with an Internet connection. For free storage, Yahoo! Briefcase (<http://briefcase.yahoo.com>) is the place to go. You can store up to 30MB of data with each account, which means if you have multiple accounts, you can easily have more than 100MB of free storage for anything you need to store. Accessing Yahoo! Briefcase is a breeze: Simply surf to its home page and enter your Yahoo! username and password. Adding files requires only a few clicks, and you can upload up to 5MB (from

up to six files) at a time. You can even share your files with other Yahoo! users by listing those to whom you'd like to grant access.

Remember To Exercise Caution

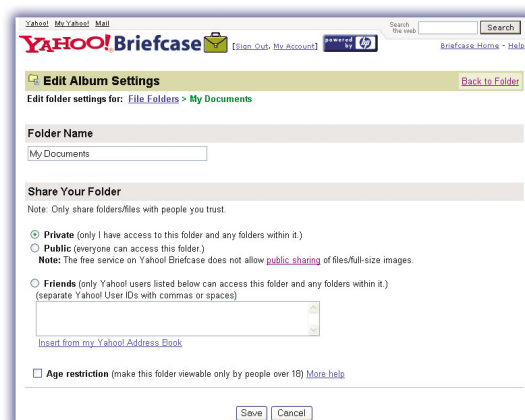
Nobody likes poor service, and it's usually easy to determine whether an online service will satisfy your needs. Nonetheless, it's still a good idea to look closely at the fine print and details of a service you plan to use regularly. Sure, you might be tempted to buy a computer part from the reseller boasting the lowest price via Price Watch, but if you read Price Watch's Frequently Asked Questions section (click the About link on its home page), you'll discover that "sellers and buyers are completely responsible for all aspects of the transactions in which they choose to participate." In other words, if a reseller stiffes you on a transaction, you can't blame Price Watch. Also, watch out for sites that require you to install utilities before using their services because those utilities might contain intrusive spyware code that lurks in the background. If the site doesn't let you use the service without installing a suspicious program, look elsewhere for the service.

The sites we list represent our favorite services, but that doesn't mean you need to limit yourself to one service for each of your needs. For instance, even though MapQuest can provide relatively accurate directions on a regular basis, it doesn't hurt to occasionally double-check the same directions via Map24 or another site. ■

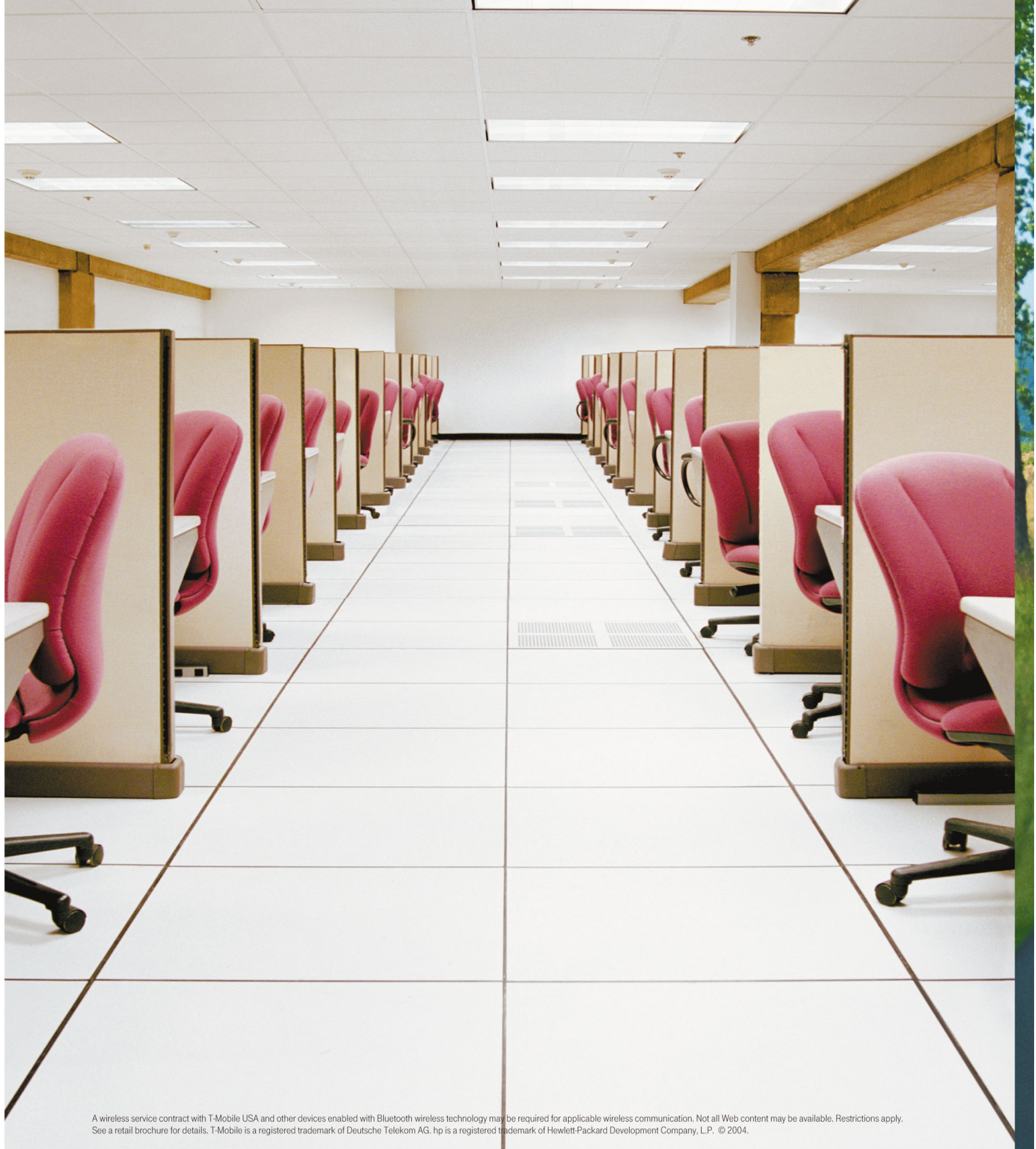
BY CHRISTIAN PERRY



Regardless of what you need to calculate, you're bound to find a calculator that fits your specific needs at Calculator.com.



With Yahoo! Briefcase, you can enter the names of other Yahoo! users to easily share your files with them.



A wireless service contract with T-Mobile USA and other devices enabled with Bluetooth wireless technology may be required for applicable wireless communication. Not all Web content may be available. Restrictions apply. See a retail brochure for details. T-Mobile is a registered trademark of Deutsche Telekom AG. hp is a registered trademark of Hewlett-Packard Development Company, L.P. © 2004.

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Introducing the new HP iPAQ h6315 Pocket PC only from T-Mobile. It's the all-in-one device that lets you go into the office, without going into the office. Get the most *WHENEVER* minutes®, unlimited e-mail and unlimited Web browsing, plus Wi-Fi access at thousands of HotSpot locations nationwide. Find out more at www.t-mobile.com/ipaq or call 1-800-TMOBILE.

You really should get out more.



T-Mobile®
Get more from life®

Fast, Free & Friendly

Tech Support Center Is A One-Stop Shop

Go ahead—try to think of something that's fun about calling tech support. Tough to do, isn't it? There's just not much that's enjoyable about having to contact a tech support representative. By the time you make the dreaded call, possibly after hours of aggravation as you try to resolve the problem yourself, you're almost always angry, frustrated, and ready to throw your computer out the window. And who could blame you?

But don't do it. There are good tech support resources available to you, and one of the best is just a mouse-click away. Tech support via the *Smart Computing* Web site is fast, comprehensive, free, and—perhaps best of all—run by actual live human beings who really want to help you. (Did we mention that it's free?)

Check Out The New Online Tech Support Center

If you're a *Smart Computing* subscriber, you already know that SmartComputing.com is a great place to find product reviews, answers to questions,

info about various computer-related technologies, and much more. But perhaps you haven't heard the latest: SmartComputing.com's newly expanded Tech Support Center has become a one-stop shop for computer problem-solving.

Just click the Tech Support Center logo or link, and you can access our databases of error messages, our knowledgebase, a huge archive of troubleshooting articles and maintenance procedures, and (our newest addition) a complete list of articles on how to install almost anything: From hard drives to card readers, and from modems to motherboards, you'll find complete instructions on how to install just about any type of hardware and software.

(Did we mention that it's free? OK, just checking.)

As always, subscribers also have access to the complete archives of *Smart Computing* and its sister publications: *PC Today*, *Computer Power User*, *Reference Series*, *Processor*, and

CE Lifestyles. That's well over 20,000 articles, all written by experts and all searchable via the site's custom search engine.

Time For An Angst-Free Phone Call

But let's say that you've visited the site, checked out the Tech Support Center, looked at an article or two, and maybe even posted a question on the *Smart Computing* Q&A Board, but you still haven't found what you're looking for. What then?

That's simple: Pick up the telephone and give us a call. Real, live, local operators answer our phones. There aren't any confusing voice-menu systems here; we employ friendly human beings, all of whom are in our offices in Lincoln, Neb. Our in-house Web Services crew will be glad to help you find the answer you need. (For free. Did we mention that this is all free?) You can contact our Web Services reps by email (click the Email Us link in the



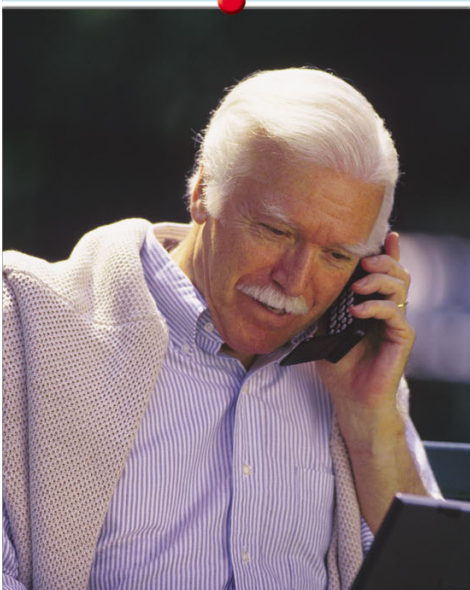
column on the right side of the Tech Support Center page) or by phone at (800) 368-8304. (That's right, even the phone call is free.)

Can we solve every single problem every single time? Nope. Some problems are more appropriate for a hardware or software vendor to address, some are simply unsolvable without replacing equipment or software, and a few are just so involved that no one could solve them without the computer in question sitting in front of him. But we can help you solve most of them; in fact, often the solution is in our archives or in a Tech Support Center article, and all we have to do is point you to it. And in *every* case, you'll have more information when you finish working with us than you had when you started, plus you'll have had the pleasure of working with support folks who really care about you as a person and as a reader and will work hard to solve your problem or answer your question.

So, for the next 11 pages, let us show you how our Web site works and how to get the most out of it. Then, drop by the Tech Support Center or give us a call. It'll be one of the most pleasant tech support calls you'll ever make. ■

BY ROD SCHER

www.smartcomputing.com



Get Smart

Make The Most Of SmartComputing.com

Find Answers

My Personal Library **LOOK!**

Search All Articles

Read Hardware Reviews &
Create Comparison Charts

Read Software Reviews

Web-Only Articles

Q&A Articles

Computing Chat

Directory Of

Computing D
Encyclopedia

Daily Tip Archi

Web Log Archi

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User Groups

Advertising

About Us

Extras

The Internet obviously has been one of the best inventions in the history of technology, but let's face it: For all of the invaluable content you'll find on the Web, there is plenty that most of us don't want to read, see, or—worst of all—watch “live, live, live!”

Thankfully, the Web has plenty of useful and interesting sites that more than make up for the offensive, scary, and just plain disturbing sites. And, if we can be self-serving for a moment, one of the best Web resources for computer users is *Smart Computing's* Web site (<http://www.smartcomputing.com>). *Smart Computing* subscribers can search the archives of past issues from the entire *Smart*

Computing family of magazines, including *PC Today*, *Computer Power User*, *CE Lifestyles*, and *Reference Series*. They also can read several Web-only articles and preview articles that will appear in future issues. Finally, *Smart Computing* subscribers have full access to the site's Q&A Board, where users help each other solve problems.

Those who subscribe to the print version of the magazine have full access to the site, including access to all current and past articles. At SmartComputing.com, subscribers simply have to register with the site to receive all of the site's benefits. (If you aren't a subscriber to the magazine, you also can subscribe via the Web site by clicking the Subscribe & Shop link.)

Online Registration

At the SmartComputing.com home page, click the Register link near the top of the page. Then click the Register As A Subscriber link. (You also can register as a Guest or as a Newsstand Customer, but you'll have limited access to the site's features.)

On the Register page, enter the requested details. (Be sure to enter the mailing information exactly as it appears on your magazine's mailing label, or the site won't be able to match your data to your subscription.) Click the Submit button to transmit your information.

SmartComputing.com will find your subscription data and send you a username and password via email. It only takes a few minutes to receive your login information; as soon as you receive the email, you can begin

using the Web site. To log in to the site, click the Log In link in the upper-left



Tech Support

Q&A Board

Web Log

C E N T E R

corner of the home page. Enter your username and password and click Submit. (If your PC accepts cookies, click the checkbox on this page to have SmartComputing.com log you in automatically each time you visit the site.)

If you've registered with SmartComputing.com previously but cannot remember your username and/or password, click the **Forgot Your Password?** link. You'll need to provide your email address along with your username or ZIP code to retrieve your password. Click the **Look Up Password** button, and SmartComputing.com will email your username and password to you.

Site Extras

Once you've logged in to SmartComputing.com, you can perform several functions to make the most of your account (both your Web site account and your print issue account).

Change your mailing address. It's easy to change your mailing address for your magazine subscription through the site. Click the **Customer Service** link in the upper-right corner of the page, click the **Change The Address On My Subscription** link, enter your new mailing information, and click **Submit**.

Update your email address. Along the left side of the home page, the site displays your email address in a text box. To enter a new email address, simply type it in the text box and click the **Change** button.

Receive daily tips. The site can send you a daily email containing a handy computing tip. In the SmartComputing.com Daily area of the home page, click the **Sign Up Now** link below the **Free Daily Email** line. Then, after you click the **Confirm** button, the site will automatically begin sending tips to the email address you have registered with the site. Click the **Daily Tip Archive** link along the left side of the home page to see a list of past daily tips. You also can search the tips archive.

View content in magazine format. Many recent issues in the *Smart*

Computing family of magazines can be viewed and downloaded in PDF (Portable Document Format) from the site. After you register, you'll see a **My Special Features** link in the upper-left corner of the home page. Click it and then click the **View PDF Issues** link. Next, select the issue you want and click the **PDF** link for the type of file you want to view.

Take advantage of the Q&A Board. SmartComputing.com's Q&A Board is one of the best spots online for finding answers to computing questions. As long as you're a subscriber, you can click the **Q&A Board** link (along the left side of the home page) and click the **Post A Question** link to ask a question of the site's other users. You also can search through the questions already posted on the board by scrolling to the bottom of the Q&A Board page. Enter your search criteria and click the **Search** button.

Renew your subscription. Using a credit card, you can renew your subscription to any of the magazines belonging to the *Smart Computing* family. Click **Customer Service** from the upper-right portion of the home page and then click the **Renew Subscription** link.

Get technical support. SmartComputing.com recently started a **Tech Support Center** on the site. Click the **Tech Support Center** link at the top of the home page to enter the center, where you'll find a variety of self-help tools, as well as a phone number and email link you can use to contact our Tech Support staff.

Current Articles

From the home page, you can access the magazine's latest articles using a variety of methods.

Web-only articles. Start along the left side of the home page and scroll down to the **Web-Only Articles** section (the one enclosed in a box of its own). You can read through any of the articles listed there, none of which appear in the print issues of *Smart Computing*.

The image shows a web form titled "Smart Computing Address Change Notification Form". It has two columns: "Old Information" and "New Information". Each column contains fields for First Name, Last Name, Company, Address (Line 1, Line 2), In my (Business/Home), City, State (dropdown), ZIP, Country (dropdown), Phone, Fax, and Email. There are "Submit" and "Cancel" buttons at the bottom.

Performing administrative tasks concerning your subscription, such as changing your mailing address, is easy at SmartComputing.com.

The image shows a web form titled "Smart Computing Forgot your password?". It has a single column with fields for Email, Username, and Zip Code. There is a "Look up Password" button and a "Return to Previous Page" link at the bottom. The footer contains copyright and legal information.

To retrieve a forgotten password, simply enter your email address and your ZIP code or username.

(Throughout the Web site, articles that are only available online are marked with a Web-Only logo.)

On newsstands. If you scroll toward the bottom of the home page, you'll find a full list of the family of *Smart Computing* magazines. You can click the latest issue of each title to view the articles in that issue or to jump to a particular magazine's Web site to browse through its other issues.

Future issues. In addition, SmartComputing.com posts several articles online that haven't yet appeared in print. You can read these articles by clicking the links in the **Next Month's Articles Online Now** area (in upper-right section of the home page).

Find Past Articles

Another useful aspect of SmartComputing.com is its archives.

Subscribers have complete access to articles that have appeared in past issues of the entire family of *Smart Computing* magazines (going back to 1992). You can browse through individual issues or search the archives by using keywords.

To access the site's library of articles, click the Search All Articles link along the left side of the home page. From the page that will soon appear on-screen, you'll have access to all of the search options you can use to locate articles on a particular topic from the archives.

At the top of the page, you can use the Browse option to look through a list of individual issues or individual articles. If you choose the list of individual articles, the site will ask whether you want to narrow the list by date and publication. If you choose to look through individual issues, just click the title of the issue to see its list of articles.

When you scroll down toward the center of the page, you'll notice the 3-Step Detailed Search section. In Step 1, select which publications you want to include in your search. Next, pick the type of article (such as a tutorial) you want to read in Step 2. Then in Step 3, select from such categories as Audio, Networking, Software, and Video & Photography. After following these steps, you'll see another Web page display that will list the types of

articles that meet your search criteria. Select one of the article types from the list or click Show All to see all of the articles matching your search criteria.

Finally, you can simply search by using keywords. Perform Steps 1 and 2 (as described in the previous paragraph), scroll to the bottom of the page to type in your keywords, select one of the radio buttons designating how you want those keywords applied to the search (such as Exact Match), and click the Search button. After the engine completes its search using your keywords, it will sort the results by relevance; click Sort Results By Date to change the order in which the results display. If your results list is too large, you can scroll to the bottom of the page, enter a date range in the appropriate fields, and click Search again.

Use My Personal Library

As you find articles to read at SmartComputing.com, you may want to keep them handy so you can reference them again later. SmartComputing.com gives you the ability to build a Personal Library of articles that you can access at any time. As you're reading an article that you want to save, click the Add To My Personal Library link in the upper-right corner of the page. The site will ask you to create a folder in which to store the article and to type a brief note about the article's content. Click the Save button.

You can access your Personal Library at any time. If you're reading an article, click the View My Personal Library link in the upper-right corner. Or, from the home page, click the My Special Features link in the upper-left corner and then click the View My Personal Library link.

To adjust the structure of your Personal Library, click the Edit/Reorganize My Library link. You can delete articles, change folder names, and perform other administrative tasks through this link.



By using the My Personal Library feature, you can save a list of your favorite articles from the site.



If you run into problems while using the site, just visit the Site Help page to access step-by-step instructions for performing common tasks.

Final Questions

If you have questions or problems come up as you're exploring or using SmartComputing.com, just click the Need Site Help? link or the Help link, one of which appears at the top or bottom of most pages. The Site Help page has a list of step-by-step instructions and contact information that you can use. You also can contact the SmartComputing.com customer service department by clicking the Customer Service link on the home page, followed by the Customer Service Request link.

Whatever you do, don't let SmartComputing.com sit idle. Whether you want to learn more about technology or you want to solve a particular computing problem, this Web site can deliver. It's a resource that's meant to be shared. ■

BY KYLE SCHURMAN



SmartComputing.com's search options help you sort through an archive of thousands of articles.

Indulge yourself.



Indulge



Add stylish ViewSonic® ViewMate® Desktop Collection accessories for the ultimate desktop.

You deserve the visual experience that's the professionals' choice. And now you can get this grand view for under a grand. ViewSonic's luxurious 20" VP201b has ultra-high 1600x1200 resolution not even found on smaller LCDs. So indulge yourself in the screen with sharper text and more brilliant color, in the size that means less scrolling and searching, and in the style designed with your comfort in mind, including tilt, swivel and height adjustments and a sleek ThinEdge™ bezel ideal for multi-screen arrays. All from ViewSonic, the #1 display brand in the US* for price/performance.

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Preferred Features

Favorite Areas That Keep Subscribers Coming Back For More

As many of our Internet-savvy readers already know, *Smart Computing* doesn't just live on the pages of the print edition. The SmartComputing.com site extends the value of the magazine in a number of exciting ways. Here's a look at some of our subscribers' favorite features (which may soon become your favorites, too).

Searchable Archives & Reviews

It's time to get rid of that stack of *Smart Computing* issues you've stuck in the closet for future reference. You can find all of the content in those magazines on our Web site. And because SmartComputing.com provides several methods you can use to search its article archives, you'll probably find an article faster by visiting its Web site than searching through your stack of printed issues.

For example, if you finally decided to replace your aging printer, it's much quicker to go to SmartComputing.com and click Search All Articles than to spend hours (perhaps days) leafing through old magazines for printer-related articles. If you just want to look at printer reviews, you can click the

direct link (HARDWARE REVIEWS And COMPARISON CHARTS) on the Search Options page that takes you to the printer reviews area, which even categorizes printers according to price or manufacturer.

If you go back to the Search Options page and scroll down to the Step 3 area, you'll find a link (Printers & Printing) to a different group of printer resources, including articles about buying strategies and the pros and cons of multifunction devices. Or, to limit your search even further, return to the Search Options page and define your own specific search for a more targeted list of articles.

Multiple Magazines For The Price Of One

Did you realize that a *Smart Computing* subscription is really a subscription to six magazines? No, not all of these magazines will be delivered to your home, but you will have online access to all the content in past and current issues of these magazines. *Computer Power User* is geared toward advanced users, *Processor* focuses on computing in the business environment, *PC Today* concentrates on OSes (operating systems), *CE Lifestyles* looks at the world of consumer electronics, and *Reference Series* features comprehensive coverage of a particular topic (or a related group of topics) in each of its issues. For more information, click the About SmartComputing.com link in the lower-left corner of the home page.

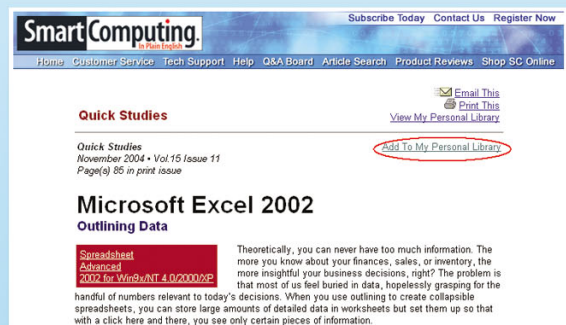
The six-in-one concept also extends to archive searching from the Search Options page. Even if you don't normally browse through *Computer Power User* or *Processor* issues (or any of our other publications, for that matter), you can easily add their articles to your archive search with a couple of simple clicks below Step 1. You never know—even an article written for a more advanced user might provide you with that tidbit of info you've been looking for.

My Personal Library

Still in pursuit of a new printer, you've used the search features via the Search Options page and found a couple of useful reviews, some good buying tips, and an in-depth comparison of printing technologies. But it's getting late, and you need to postpone your research until tomorrow. Will you have to perform all these searches again? Of course not; that's where My Personal Library comes in. At the top of every article you view, you'll find the Add To My Personal Library link. Click it and up pops another page that tells you how to save the link to the article. You also can attach a note to the saved article link with a brief summary about why you liked that particular article.

A good way to use My Personal Library in conjunction with your monthly magazine is to keep track of which articles you found most useful and then find those articles at SmartComputing.com so you can add them to your Personal Library.

Accessing your Personal Library once you add articles to it is easy. From the top of the SmartComputing.com home page, click My Special Features,



Adding an article to My Personal Library is as easy as clicking this link.

FAVORITES
 Tech Support
 Personal Library
 Article Archive
 Hardware Reviews
 ✓ Q+A Board
 Dictionary

click View My Personal Library, expand the appropriate folder, click an article link, and watch as the article displays in a separate browser window.

Free Tech Support

Many people view “free” as one of the nicest words in the English language. “Tech Support,” however, may not be such a positive term to computer users, especially if it evokes memories of the hours they’ve spent on the phone trying to get help for various computer problems. The thing is, there’s a lot of troubleshooting we can do ourselves without relying on tech support reps, but we just need a little nudge in the right direction. Well, that’s what SmartComputing.com’s Tech Support Center tries to do: help people fix their own problems.

For instance, if you keep seeing an error message appear on-screen that doesn’t make sense, you can take advantage of the Tech Support Center’s alphabetized, searchable list of error messages to get both a translation of the error and a possible resolution.

The Security & Privacy area and the daily Weblog keep you current on the latest **malware** (software created for malicious purposes) news. The Preventative & Regular Maintenance section should be required reading for all computer owners, and the Driver Education area helps you find device drivers online. But don’t go anywhere yet; the Tech Support Center offers much more. Need a list of file extensions? Trying to find info about eliminating viruses? Want to know more about stopping spam? Tech Support Center addresses all of these questions and more. Plus, it’s not just a resource for solving problems; you can use it on an ongoing basis to learn more about preventing computing problems. Spend 10 minutes a day at the center for a few months, and you won’t have to call your brother for help again; heck, he may even start calling you.

Step ③ >> Finally, click a category from the list below...

Audio Computer Parts & Components Computers & Computer Systems Handheld/Mobile Computing Input Devices Keyboards, Mice, etc.) Internet/Web (Browsers, Email/Spam, Pop-Ups, etc.) Networking Operating Systems (Windows, Apple/Mac, Linux, etc.)	Other Subjects of Interest Printers & Printing Security/Privacy (Viruses, Spyware, Browser Security, etc.) Software Storage Video & Photography Voice/Telephony
---	--

OR

...enter a word or phrase to search by:
NOTE: You may also enter a word or phrase, and click one of the categories above.

☐ ALL Words ("digital" AND "photography")
☐ ANY Words ("digital" OR "photography")
☒ Exact Match ("digital photography": all words MUST appear together)

On SmartComputing.com’s Search Options page, combining a phrase and a category search can produce more targeted results.

Ready for the best news? If you’ve exhausted all of the site’s resources, including the Q&A Board (see the next section), you can call the Web Services staff at (800) 368-8304, and someone will try to help you with your problem. And it’s still—there’s that nice word again—free.

Q&A Board

That’s right—Q&A means questions and answers. The idea behind

the Q&A Board is to create a community of *Smart Computing* readers who can assist each other in dealing with everyday computer questions and problems. Click the link on the home page, and if it’s your first time to the board, click the How To Use The Q&A Board link. Here, you’ll find a list of FAQs that include tips on how to use the Q&A Board, and you’ll find out what the guidelines are for posting and answering questions. For example, you’ll find out how to check the Q&A archives to see if a question similar to the one you’d like to post has already been asked and answered.

Next, go to the Set Options page to fill in as many specifics as you can about your computer system. That way, it will be easy to include this info in any postings you make. After that, take a look at some prior postings to get a sense of how the board works and some of the effective (and not so effective) ways that people use it. When you’re ready, post your question. One gentle reminder is in order: Although there are some very knowledgeable users who regularly post here, you should always give each answer careful consideration before following its advice. Don’t go reformatting your hard drive just because one person said you should. And if you decide to answer someone else’s question, others will appreciate it if you declare your level of certainty, especially if you’re not 100% sure. For more information, see “The Q&A Board” on page 80.

But Wait, There’s More

These are just a handful of our subscribers’ favorites, but after browsing our site for a while, you may find that you fancy other areas, such as the Dictionary & Encyclopedia search engine or the chat rooms. There’s only one way to find out: Point your browser to <http://www.smartcomputing.com> and see what the site has to offer you. ■

BY STEVE TAYLOR

Got Questions?

Get Answers Using The Resources

At SmartComputing.com



Smart Computing magazine is an invaluable resource to have around when you're having trouble with your computer, but you can't be expected to keep every issue on hand or to know exactly what page holds the answer to any given problem. Wouldn't it be nice if you had all of that information at your fingertips, 24 hours a day? At our Web site (<http://www.smartcomputing.com>), you do.

If you haven't visited for a while, you're in for a real treat, thanks to new additions such as the Tech Support Center. Plus, as a subscriber, you automatically gain access to all of the

resources on our site. Even if you purchased this issue off of a magazine rack, you're still eligible for a newsstand trial account, and if you have a technical problem with your computer, it's very likely our site has a solution.

First Things First

Launch your Web browser and surf to SmartComputing.com. When the Web site loads, click Log In near the top and enter the user ID and password associated with your subscription. If you don't have that information yet, click the Register As A

Subscriber link and fill out the form that appears. Your username and password are automatically emailed to the email address you supply, so keep the information in a safe place. If you don't receive the message, you can email our Web site support team at webhelp@smartcomputing.com or get live phone support from a Web Services representative by calling (800) 368-8304 between 7 a.m. and 8 p.m. (CST), Monday through Friday.

If you don't have a subscription, all is not lost; check out the "Newsstand & Guest Accounts" sidebar for details about activating a trial account or registering as a guest.

When you are logged into the site, a welcome message appears where the Log In link used to be, and you'll have unfettered access to all of the site's content.

Tech Support Center

You'll find the most recent sizeable addition of content to our site in the Tech Support Center, which contains solutions to almost every computer problem imaginable. The Tech Support Center is divided into several key areas, and each of the following subheads corresponds to a particular section on the Tech Support Center's main page.

Error Messages

Most error messages perplex even the most seasoned computer experts, but the Tech Support Center maintains a large database of common error messages so you can see what they mean and read tips for resolving the errors. Preparation is key when

searching for error messages in the database or working with a Web Services representative. Write down the exact text of any error messages and note the series of actions that preceded the problem.

To search the database, click Browse Error Messages Alphabetically to look for a match manually or click Search By Error Message Text to let the search engine look for you.

If you use the search option, you need to enter the text exactly as it appears in the error message for the most accurate results. For example, if the body of the error message states, "(0Bh): Not Present Fault," be sure to include all parentheses, colons, and spaces as you enter the text in the search field. Select the Contains radio button and click Search to see if a match appears.

Because all error messages are listed alphabetically, you can use the Begins With radio button to cast a broader search net. The less information you enter using this option, the more matches you will see. Using the same error message we mentioned in the previous paragraph as an example, if you select Begins With and just type (in the search field before clicking the Search button, you will see all error messages that begin with a parenthesis.

Solutions Knowledgebase

The Solutions Knowledgebase is the best place to go when you need troubleshooting information for problems that aren't necessarily accompanied by specific error messages. This is the section you should access when your PC runs slowly, refuses to boot, refuses to shut down, or crashes without warning. Or, it's the place to visit if you are experiencing hardware trouble in general.

In this section, you'll also find articles containing instructions for doing such things as starting the

computer in Safe Mode or creating bootable diskettes, both of which are often cited in troubleshooting articles but are considered to be so basic that they aren't always explained in detail. Here you can get thorough information about these simple steps.

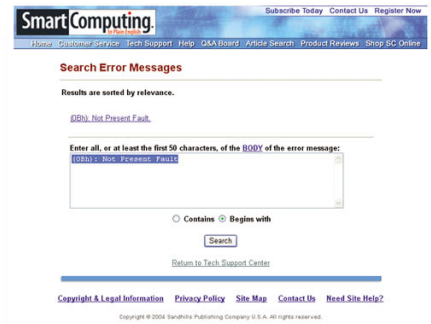
Articles in the Solutions Knowledgebase are divided into several categories, such as Computer, Operating System, and Networking. To see the entire list separated by category, click the Browse A List Of Common Problems & Frequently Asked Questions link. Otherwise, click Search The Complete List and enter your search terms in the text box. As always, use basic terms and the ANY Words radio button for a broad search.

For more restrictive searches, enter more specific terms and use the ALL Words or Exact Match radio buttons. For example, searching for the word "drive" will find all the articles pertaining to hard drives, optical drives, and floppy diskette drives, whereas entering the phrase "reformat drive" into the search field and clicking the ALL Words radio button only returns articles that pertain to that specific task. Stick to the ALL Words and ANY Words searches for the best results, as it is easy for the search tool to omit helpful articles when you select Exact Match.

Readers tend to experience the same types of problems, and you can see a list of the most popular Solutions Knowledgebase articles by clicking the Top 25 link. This list is updated weekly and should be among the first pages you visit at the Tech Support Center.

Basic Troubleshooting Articles

Want to get even more general than the Solutions Knowledgebase? Try clicking the Basic Troubleshooting Articles link, which leads to dozens of articles covering the most common problems users experience



When searching the error message database, be sure to include any special characters (such as parentheses and colons) listed within your on-screen error message.



We maintain a running tally of the top 25 common problems and FAQs that our readers are interested in, so be sure to check them out.

with OSes (operating systems), computers, hardware, software, and in many other categories. Plus, all the articles in this section are searchable using the search tool options listed near the bottom of the page.

Security & Privacy

Viruses and spyware are bigger threats than ever, and the Security & Privacy section of the Tech Support Center provides several articles that are essential for troubleshooting



Visit our Tech Support Web Logs area frequently for information about important security alerts.



When browsing our articles, remember that you can access the content from all of the magazines we publish, not just *Smart Computing*.

problems caused by these types of vermin. The links included in this section take you directly to articles that discuss the effects of these threats, how to avoid becoming a victim, and other related information. Be sure to click the A Malware Primer link first to learn the basics of these destructive and intrusive programs.

This section also contains the Tech Support Center Weblog, which is one of the site's most useful features. This is the space where our staff posts breaking news about security-related threats. The latest alert is always visible on the main Tech Support Center page, but you can see previous entries by clicking the More link and then clicking the Click Here To View The Tech Support Web Log Archive link. Log

in often to get the latest information about threats to your PC and how to deal with them.

Preventive & Regular Maintenance

An ounce of prevention is worth much more than a pound of cure when it comes to computing, and this Tech Support Center section contains a Web-only article describing basic system maintenance. Be sure to print out the handy checklist that explains how often you should perform each maintenance task.

Articles On How To Install ... Just About Anything

Installing hardware is easier than you think, and the articles in this section guide you step-by-step through the installation procedures for dozens of different types of components. Just click the link that pertains to the type of hardware you want to add to your computer and follow the instructions.

If you really want to get serious, there are articles detailing such advanced projects as adding a window to the side of your computer's case or outfitting your computer with a water-cooling system so you can make the CPU run faster than its rated speed.

This section also includes articles on installing all types of software, from applications to OSes. There's even a guide on how to create a dual-boot system if you want to run two different versions of Windows on the same PC.

Driver Education

No, you haven't accidentally stumbled into the DMV (Department of Motor Vehicles). Drivers are the software that hardware components use to communicate with Windows, and by learning more about how drivers work and how you can keep your driver software

current, you can keep your PC running at peak efficiency.

Other Helpful Tech Support Tools

The final portion of the Tech Support Center contains several extremely useful links, beginning with one that leads to our Computing Dictionary. You can use the letters and numbers to browse the dictionary alphabetically, or you can enter the term you are looking for in the text box and select the Contains radio button for the best results.

Another link in the Tech Support Tools section leads to a list of file extensions, which are the three-character codes (such as .DOC, .TXT, and .JPG) that Windows uses to distinguish among file types. Scroll down the list for an explanation of each extension or click one of the letters at the top to quickly jump to the section of the list containing extensions that begin with that letter.

Finally, you'll find a link to the contents of the July 2003 issue of our *PC Novice Reference Series*, a compendium of more than 2,000 computing tips for nearly every version of Windows, several software suites and applications, and many hardware devices. Printed versions of this reference tome are no longer available, so unless you were lucky enough to get a copy of the magazine, the only way you can access its valuable tips is via our Web site.

Search All Articles

If the Tech Support Center doesn't answer your question(s), it's likely the *Smart Computing* article archive contains the answer you seek, as it holds the entire contents of every issue of *Smart Computing* published since January 1992 (back when the magazine was called *PC Novice*). Click the Search All Articles link on the *Smart Computing* home page to access this enormous repository of information.

Logging in as a subscriber, guest, or newsstand customer will grant you varying degrees of our site's resources.

The Browse section at the top lets subscribers access all the articles in the latest issue of *Smart Computing* (along with any Web-only articles), browse all issues of the magazine, or browse all the articles ever published in the magazine.

Plus, logging into the site provides access to far more than the *Smart Computing* article archive. It's also your ticket to the Web sites for all of Sandhills Publishing's other magazines, including *Reference Series*, *PC Today*, *Computer Power User*, *CE Lifestyles*, and *Processor*. These magazines also post several Web-exclusive articles, all of which are included when you browse or search their archives.

All told, subscribers have access to more than 22,000 articles, so in most cases, the search options on this page are more useful than the browsing tools. At the very bottom of the page, you can enter search terms and select radio buttons just like you can for the search tools we've discussed elsewhere in this article, and all of the tips described previously apply here. To help narrow your search, try using the 3-Step Detailed Search option in the middle of the page.

In Step 1, you select the publication or publications you want to search by selecting the checkboxes next to their

names. In Step 2, you select a radio button to narrow the scope of the articles you want to search for, which in this case will likely be either Troubleshooting And Problem Solving or Tutorials On Installing, Upgrading, Replacing, Optimizing, Etc.

In Step 3, you click a link that corresponds with the category in which you want to search, and a page appears displaying the number of articles in several subcategories that best match your search options. Click Show All to display a list of all the articles, or click one of the subcategory links to display only the articles in that section.

Need More Help?

If the Tech Support Center and article archives didn't answer your question(s), plenty of other troubleshooting resources are available. The Q&A Board is a good resource because it lets you post specific questions that other subscribers might be able to answer. Later, to see if a question you've posed has been answered, enter the Q&A Board and click the View My Responses link. (For more information, see "The Q&A Board" on page 80.)

The Computing Chat Room is another excellent resource that has the potential to provide real-time answers to your questions.

The number of users currently logged into each of the six chat rooms is always listed, so pick one that has a lot of people in it and ask away.

If you read an article or an answer that contains technical terms you are unfamiliar with, be sure to access the comprehensive Computing Dictionary & Encyclopedia to look up the meanings of those terms.

In addition, the About Us link expands to provide a link for contact information if you need to get in touch with someone at the magazine. If you want to see what topics we plan to cover in future issues, click the Upcoming Issues or Editorial Calendar links that appear on the expanded About Us menu.

Last but not least, don't forget about the site's built-in help system. Just click the Help links found at the top of nearly every page on the site to access articles about everything from site registration to handling problems with your subscription. All of these articles are in PDF (Portable Document Format) for easy printing. Membership definitely has its benefits—but only if you take advantage of them. ■

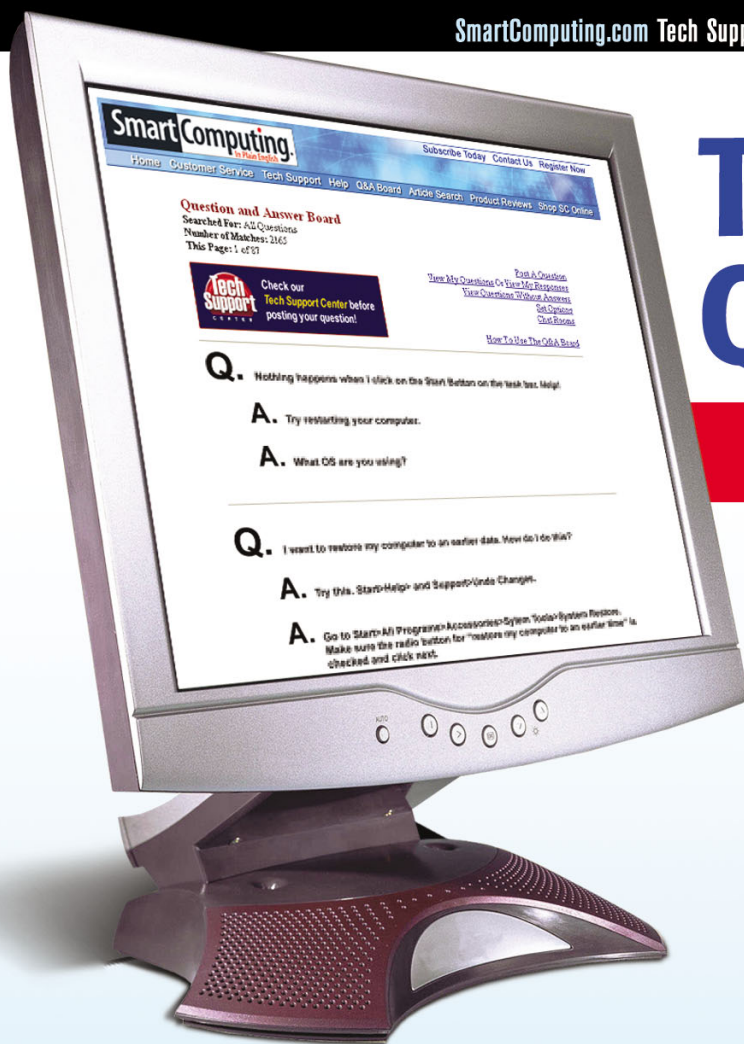
BY TRACY BAKER



Newsstand & Guest Accounts

Do you want to see what you're missing by not subscribing to *Smart Computing*? If you buy an issue on the newsstand, you can call our Web Services team at (800) 368-8304 to get an access code that will give you full access to our site for 30 days. Then, all you have to do is go to the SmartComputing.com home page, click Register, and then click Register As A Newsstand Customer to enter your code and gain trial access to the site.

A guest account only provides limited access to the site. You can't use My Personal Library, read the full text of articles, or use the Q&A Board. But as a guest, you can read software and hardware reviews and access the Tech Support Center. Just click Register on the home page, click Register As A Guest, and fill out the registration information.



The Q&A Board

Thousands Of Friends
Are Here To Help

If you're like most computer users, you've spent your fair share of time talking to technical support representatives on the phone. As well, we're sure we've all heard our share of nightmarish tech support stories, such as being on the phone for hours without getting any help at all. Imagine how wonderful it would be to have access to not just one person who might be able to answer your computer question(s) but thousands of people who might know the answer. Does that sound too good to be true? A quick visit to the Q&A Board at *Smart Computing's* Web site (<http://www.smartcomputing.com>) will make you a believer.

A Meeting Place

The Q&A Board is a place where people can exchange technology-based information. The basic format is

simple: You post a question, and another user (or more) replies with an answer. This presents a user with the exceptional ability to reach out to a wide audience for assistance with a problem or query.

Now for some background information: The Q&A Board has been around for more than six years and currently averages about 70 to 75 questions per day. About 97% of those questions receive an answer or at least a reply from one or more fellow users. (Of course, SmartComputing.com's staff can't validate all of these answers, so we urge you to exercise caution when considering suggestions from others.) At the present time, there are more than 400,000 posted messages.

To give the Q&A Board a test run and evaluate how its question-and-answer process works, we posted two messages about separate PC-related issues to see if anyone would be able to

provide us with an answer. When we checked the board again later that same day, we noticed that we had already received answers to both of our questions, and the initial responses to each question were posted in less than an hour. We also were pleased to see that the responders were friendly in the way they worded their answers. In other words, no one made us feel foolish for asking such questions.

Join The Community

You can access the Q&A Board by clicking the Q&A Board link from the left column on the SmartComputing.com home page. The Q&A Board main page displays a list of the most recent posts, sorted by the date and time. Further exploration of the Q&A Board reveals a helpful user interface which presents a large selection of options for customizing how you use it.

Find out how the Q&A Board works. The Q&A Board has its own FAQs page to provide users with answers to common questions about how to properly use the board and its features. Also, the FAQs page offers advice about why you should be as specific as possible when posting a question. To access the FAQs page, click the How To Use The Q&A Board link at the top of the main Q&A Board page.

Abide by the rules. The Q&A Board moderators have certain rules they expect everyone to follow. At the bottom of the FAQs page, click the Rules Of The Board link to find out what is

expected and what will not be tolerated. The rules are few but understandable: no profanity, no personal attacks, no advertising, and so on. As users read these rules, one thing that might surprise them is that the Q&A Board moderators regularly scan questions and replies to make sure that no one is disrupting the helpful, positive atmosphere they've worked to establish.

Search for answers. With nearly half a million messages already posted on the Q&A Board, it's possible that your issue has already been addressed. You can use the Has Your Question Already Been Asked And Answered? Click Here To Find Out link to search through the previously posted questions and answers. Searching for a posted question is rather straightforward. You can use keywords to find posts that contain specific text, or you can jump to a specific message number that you already know about. You also have the option of limiting the messages you want to scan to a certain date range, as well as sorting the results based on keyword relevance or the date a message was posted.

Post a question. Although anyone can view posted messages, only subscribers have the ability to post a question and send replies. Posting a question is simple: Click the Post A Question link in the upper-right corner of the Q&A Board opening page, and a new page will display, providing a Subject field and a Question field you can fill out to state your question or problem. After you finish composing your message, click the Send button to post your query to the board.

Cool Features

The developers of the Q&A Board included various features to make the forum easier for subscribers to use. The ease with which you can track your messages, both questions and replies, is considerable. For example, you can view your specific posts by clicking the View My Questions and View My

Responses links. There also is a handy feature that lets you "subscribe" to a specific message, the Subscribe To This Message link, which directs the Q&A Board to email you updates when a particular message receives replies.

The Set Options link on the main Q&A Board page lets you customize the way you view the messages on the Q&A Board and lets you create a signature that includes your computer specifications, which will be listed at the bottom of every message you post. Adding a signature such as this helps those who are trying to answer your question better understand the type of system you're using so they can offer the most appropriate advice.

In addition, you can save messages in your Personal Library by using the Add To My Personal Library link from within a message; this feature has its own set of options for organizing the messages you bookmark in your Personal Library.

Bringing Users Together

The SmartComputing.com Q&A Board is a great place for all users—whether they're novices or seasoned pros—to share information about computing experiences and offer suggestions to one another. And the Q&A Board's features just add to the overall quality of the users' experiences, making it as easy as possible to post questions and receive replies, as well as track the results.

The first time you decide to explore the Q&A Board, you'll notice that there's a positive overall feeling from the user community that encourages the sharing of knowledge. While putting the Q&A Board to the test,

Although the amount of time it takes to receive a response varies, it was a nice surprise to see that our posted question received a response in 43 minutes. The question we posted next received its first response within 51 minutes.

Search Past Q&A Board Questions & Responses:

Message Keywords:

Message #:

Message Posted On or After Date (mm/dd/yyyy):

Message Posted On or Before Date (mm/dd/yyyy):

Set Results By:

[Click here for Search Help](#)

[Click here to view all questions](#)

About Q & A

The Smart Computing Q&A Board compiles questions and answers posted within the last 30 days by Smart Computing readers. Smart Computing does not take responsibility for the content that is posted on the board. Readers who follow the technical advice posted on the Q&A board do so at their own risk.

[Rules of the Board](#)

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You can use various search criteria to see if your question has already been asked and answered.

Set Options

Option 1: Computer Specifications: (See example below)
(This will be seen at the end of each question and reply you post)

Manufacturer:

Model:

Desktop: ☐ Notebook: ☐

CPU:

Installed RAM:

Operating System:

Disk Drives:

Optional Info (i.e. peripherals, video card, etc.):

Computer Specifications Example

Example:
Manufacturer: Gateway
Model: 300SE
Desktop
CPU: Pentium 4 - 2.1 GHz
Installed RAM: 128 MB
Operating System: Windows 2000
Disk Drives: 3.5", 1.44 MB disk drive, CD-RW
Optional Info (i.e. peripherals, video card, etc.): Epson Stylus Color 760 Printer

The Set Options feature lets users display system information at the bottom of every post.

we felt comfortable posting our questions and were amazed to see that the response time from others was so quick. So, the next time you find yourself stumped by a computing problem, see if one of your Q&A buddies can be of some assistance. ■

BY MICHAEL KLIGERMAN

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Question

[Set Options](#)
[Send Email This](#)
[View My Personal Library](#)
[Add To My Personal Library](#)

Message #: 41333
Subject: Windows 98 restarting
From: mikesman
Sent: 10/16/2004 11:06 AM

Q - I have a PC running Windows 98. While Windows is loading the PC just restarts. I have tried to enter into Safe Mode, but the same thing happens. It always restarts during the splash screen for Win98. Any thoughts?

[Subscribe To This Message](#)
(Click this link to receive email notification of each answer to this question.)

[Click here to answer or reply.](#)

Message #: 41315
From: chris
Sent: 10/16/2004 11:49 AM
A: - The Sasser virus?



PC Project:

Electrify Your PC

Install A Power Supply

If you're updating your PC's power supply or building a new PC from scratch, there are so many PC power supplies available these days that it's easy to get confused.

With a little time and research, however, you can improve your odds of obtaining the best PSU (power supply unit) for your PC and installing it correctly.

Basically, a power supply supplies power, but it actually does more than that. A proper power supply needs to fit and work well with your computer. Your new power supply should fit your PC case, motherboard, and CPU; provide ample airflow to keep the computer and power supply cool; and meet high standards of fit and finish for reliability and safety. Perhaps most importantly, it should provide stable electrical power and include protection against a surge or shock, as well as generate low EMI (electromagnetic interference).

Loading On The Power

When your PC receives power, the power supply converts AC to DC and then the PC's components draw electricity, much like the flow of water. This electrical flow is usually expressed in watts, which is calculated by multiplying volts by amps. Normally the flow of electricity to your PC will be low, and many factory-installed power supplies can adequately handle this. But when your PC needs more power, such as when it is processing digital video, the computer will demand more continuous power. This is when your power supply will either flow or falter. If the PSU falters, your computer may crash, hang, or reboot.

Ideally, your power supply should provide more power than your computer will ever need, so you must determine your needs. If you have a stock PC to which you have added a lot of extra components, you'll need more power flowing reliably to those components. If your power supply has been consistently driven too hard, it can eventually become unstable, thereby damaging expensive computer components.

The best way to tell if you need more power is to add the power consumption of all components, but this can get complex. For example, AMD suggests "... calculating the power supply minimum output capacity as the power required by the processor plus 80% of the total wattage for all the other components in a desktop/tower system." Here is what that means: Take the maximum power consumption of your CPU in watts, which you can obtain from Intel's or AMD's datasheets.

Total the maximum power consumption of your computer hardware and multiply by 0.8. Add the results to get your power consumption needs.

Sounds easy, right? It is, for a seasoned electrical engineer. For practical purposes, just abide by this rule: Buy the most power you can afford. If your power supply doesn't fit your needs, it may shut off when components draw too much power. This risks the loss of computer components (or possibly even a fire) and most importantly, your data.

Basically, a power supply supplies power, but it actually does more than that. A proper power supply needs to fit and work well with your computer.

Select Your Power Supply

In today's market, there are many ATX power supplies available. ATX power supplies are specific to ATX cases, which are currently the most common on the market, so that is what we will be discussing here. (NOTE: ATX 12V V1.3 compatible power supplies support the latest P4 and Athlon-64 platforms.)

Power supplies come in various power configurations. Some power supplies come with one fan, while some come with two. Some come with the Serial ATA interface, which powers external devices, while others have a variable speed fan (either manual or automatic). Some boast over-current and over-temperature monitors, which means they'll shut off at predetermined points so as to preserve your hardware. Some have cool lights that are sure to impress.

Overwhelmed yet? Don't worry. The typical aftermarket power supply configuration is 300W to 350W with one fan. Look for the following:

Power. Purchase a power supply with a minimum of 350W; 400W is better for the average high-end computer. If you have a tall PC case, keep in mind that internal cables are also very likely long, and long cables require more power. Remember to get the most wattage you can reasonably afford. (NOTE: Be sure to read the specifications for the power supply unit. It may be sold as a P350 but may only supply 325W.)

Warranty. If a power supply provides a good warranty, it usually means it's built better than some other units. Also, look for an MTBF (mean time between failures) of at least 50,000 hours—the higher, the better.

Fan. AMD recommends that you get a power supply with a lower inlet fan, not an upper one. This is because the company feels that air flows better when the fan is on the lower part of the power supply. Some of the better power supplies include a passive



This StarTech 350W power supply (\$106.99; <http://www.startech.com>) is fairly expensive but well-made and reliable.



This is a standard connector used for hard drives, optical drives, and other internal computer components. There are different power connectors that may be used for VGA boards, Serial ATA connections, and the like.

heatsink on the back, which provides extra cooling capacity and means that the fan may not turn on until enough heat builds up in the unit. Some power supplies may have no fan at all, only heatsinks. (NOTE: It is important that your power supply fan not work against the airflow of another fan that may be installed in your PC case. If you have multiple fans installed, they should work together.)

Quiet. If the system's noise level is important to you, get a power supply that creates at most 45dB (decibels) of fan noise. (The sound of a quiet library is about 35dB.) If it's any louder, the unit may prove annoying when the fan is operating at high speeds.

Electrical and heat protection. Excessive power draw may cause heat to build up in your power supply. It's not likely to cause a fire, but it is possible. If the power supply fails by going

up in smoke, it will very likely ruin a computer component and possibly the entire computer. For extra insurance, we like to use a battery backup, which prebuffers and stabilizes the electric supply, but that's a subject for another article.

If you have a tower PC case, you can usually purchase any industry-standard ATX power supply and it will fit. If you have a horizontal PC case, it may mean that the power supply is not necessarily a standard fit. If you are unsure, ask a professional.

Nose To The Grindstone

After all the talk of selecting the right power supply, the mechanics of installing it turn out to be fairly straightforward. When you open the box, you will find specifications and directions for installing your power supply. It pays to read these to ensure that the power supply model you purchased truly fits your needs and to familiarize yourself with the unit. We'll provide general instructions, but keep in mind that your particular power supply's instructions may differ.

Removing An Old Power Supply

If you are upgrading, you will want to detach all external components and then remove the old power supply.

For safety's sake, unplug your PC from the outlet before you begin to remove your old power supply. While power supplies are built with safety in mind, they can deliver a potentially life-threatening shock. The best way to avoid this is to first unplug the three-pronged electrical connector from the wall and then unplug the electrical connector from the power supply.

To remove the old power supply, first open your PC case. Many older style ATX PC cases come with screws that require a screwdriver, but some of the newer ones have tabs or screws with knurls or knobs so you can



Typically, power supplies are removed from (or inserted into) the case either from the side or the back of the PC.

by unplugging it from the motherboard. To remove the male connector, use a knife to loosen the attachment clip and then gently rock the connector from side to side until it comes out of the socket.

Remove any other power cables connected to your computer. Remove the optical drive power cable and hard drive power cables, as well as any other power supply attachments made to the old power supply.

Finally, remove the power supply from the PC case by removing the four screws on the back. The unit will usually

come out the side, but some cases are set up so that the PSU will come out of the back of the case. Once the old unit is out, simply reverse this process to install, by slipping the new unit in its place, attaching it, and reattaching the connectors. (NOTE: The PSU will come out of your computer encased in a steel or aluminum box. Do not take the power supply itself apart. The possibility of getting a shock from an unplugged power supply is remote, but it does exist, especially if you remove the unit's protective covering.)

Install The New Power Supply

If you have a new PC case in need of a power supply, you may have skipped to this section. To see how to open the PC case, see the aforementioned instructions on removing an old power supply.

Insert the PSU, either from the side (which is typical) or the back of the PC case. Temporarily secure it with a single screw. Check to see if your PSU comes with a switch setting the input voltage. Before you plug in the AC, be

sure the switch is set to the U.S. standard of 120 volts.

Now attach the DVD/CD-ROM power connector, hard drive power connectors, and any other power supply attachments needed. Attach the motherboard ATX power connector last.

Excess heat is a common cause of computer component failure. Make sure that the cables inside the PC case are arranged so that air can flow freely into and through the case.



The male ATX power connector is phased to its female counterpart so that it can be plugged in only one way. Use the side clip as your guide during insertion because it hooks to the female ATX power connector to create a snug fit.

Once you are sure the power connectors are secure, test the system by attaching the external AC connector to the power supply, reconnecting external components (such as the mouse, keyboard, sound, and video), and turning the unit on. Once all the hardware on the computer is powered and the system starts correctly, you are in business. Shut down the computer. Use the remaining screws to ensure that the power supply is firmly attached to the PC case, reattach the PC case cover, and connect all external peripherals.

Finishing Up

Once you have purchased a PSU, installing it should only take about 20 minutes. You can now sit back, relax, and watch a movie on your PC's DVD player. Your PC is getting all the power it needs to do its work. ■

BY DON JUDD



Use just one screw to temporarily secure the power supply while you test. It will make things easier so you can test as you work. Once you have performed final testing, attach the remaining screws.

remove them by hand. Some PC cases come off in one piece, but on most newer ones, you only have to remove the left side of the case (assuming a vertical PC case and that you are facing the front of the computer) to expose the motherboard, CPU and memory, and power supply.

Ensure that the main AC electrical cord is unplugged from the unit. Then remove the male ATX power connector

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Microsoft Excel 2002

Cutting, Copying & Pasting, Part II

Spreadsheet

Beginner

2002 for
Win9x/NT
4.0/2000/XP

Last month, we covered the basics of cutting and copying information and placing it in another part of a worksheet with the Paste command. This month, we'll look at some of the options you have for different types of paste actions, as well as some of the special considerations to remember when moving formulas.

In a normal copying or cutting operation, selecting a cell by clicking it brings along both its data contents and its formatting. That means if cell A10 contains the number 25 and is formatted with bold, red type, and as currency, copying cell A10 into cell C25 means C25 will not just contain the number 25 but the bold type and currency formatting, as well.

To move just the cell's data, double-click the cell and highlight the information you want to cut or copy by dragging the pointer across it. If you do this with our previous example, you'll copy

only the number 25 from cell A10 to C25. The destination cell will have the default formatting rather than all the bells and whistles of the source cell.

Sometimes you'd like to perform the opposite operation: copying a cell's formatting and leaving the data behind. High-

light cell A10 and click the Format Painter button. When you click cell C25, you'll format it for bold, red type in currency format.

Paste Options

There's more to Excel's Paste option than you may think. The next time you highlight source information, choose Edit and Paste Special. (Or right-click the destination cell and choose Paste Special.) You'll see a list of more than 15 ways to finish your Paste operation.

The available options are too many to describe here, but if you spend time experimenting with them, you're sure to find several tools that deserve to become timesaving habits when you use Excel. For example, one Paste Special option lets you copy only column spacing between cells. Or try the Operations section of the Paste Special dialog box,

where you can choose to add the source cell's value directly to the one in the destination cell (or subtract, multiply, or divide it if you choose). Use the Transpose feature to turn a vertical group of cells into a horizontal one in one step. It's a great way to restructure spreadsheets in a hurry.

You'll find one more set of pasting choices available in the little clipboard icon that appears next to a cell you've just pasted information into. Click the down arrow next to the Pasting Options icon to see its offerings. It lets you choose to keep the source cell's formatting, match the pasted data to the destination cell's existing formatting, paste formatting only, and more.

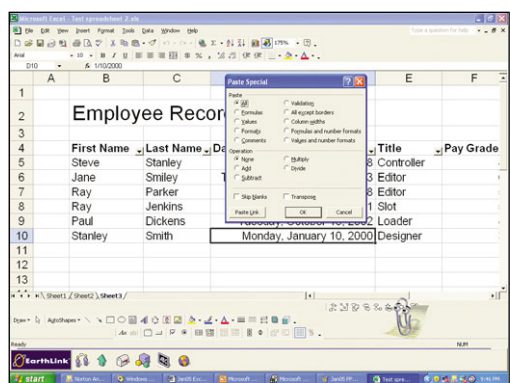
Copying Formulas

Changing a formula's location sometimes seems as complicated as moving to a new house. Just like all the bank accounts and magazine subscriptions that require updating when you move, a formula's multiple references to other cells may need updating when it moves.

When you *cut* and paste a cell, the formula inside it still works on the same cells, as if it never moved. If the formula added cells A8 and A9, it still will, no matter where you replant it. When you *copy* and paste a cell, however, its formulas will change to suit the new location. If A8 and A9 were the cells directly above the formula's old home in cell A10, moving the formula C10 will change its references so it adds C8 and C9. This means the formula now has relative references.

If you need to override these default behaviors, click the cell with the formula in it and click the formula beside the Fx icon in the Formula bar. Highlight the portion of the formula you want to change, and press F4 to cycle through your options. If you see a dollar sign in front of something, that means it's an absolute reference that won't change when the formula moves. No dollar sign? It's a relative reference that will change to reflect a move. So if you copy a formula that refers to cell \$H12, the reference to column H will remain constant, but the row reference will change to reflect the move. Move the formula down two rows, for example, and the new reference will be \$H14. If you move a formula referring to \$H\$12, it remains the same after a move. ■

BY TREVOR MEERS



There's more to the good ol' Paste command than you may think. Right-clicking a cell you're pasting into and choosing Paste Special produces more than 15 options.

WordPerfect 11

What's Tweaked In WordPerfect 11

Office Suites

Beginner

Win9x/2000/
Me/XP

Last month, we talked about the new features WordPerfect 11 offers. Corel didn't just tack on new bells and whistles—it improved on some old ones, too. We'll take a look at some of the more promising enhancements to WordPerfect tools.

Dictionary. With WordPerfect's dictionary, users can look up definitions and phonetic spellings and add the text to the documents. Although Word offers a spell checker and a thesaurus, it doesn't have anything that resembles this.

File formats. WordPerfect has always been good about remembering where it came from. This iteration is no different. WordPerfect 11 works with files from previous versions of WordPerfect and maintains the same file format from versions as

far back as 6.1. Its Quick Finder text indexer also supports legacy documents. As before, WordPerfect deftly handles importing and exporting Microsoft Word files. WordPerfect installs all file import and export filters by default, so you don't have to play a guessing game

about which ones you might need down the road. **Fonts and images.** WordPerfect 11 certainly doesn't skimp in the formatting department. As always, hundreds of TrueType fonts and clip-art images are included. The bad news is that WordPerfect still doesn't seem to take Unicode seriously. Unicode is a worldwide character encoding standard that aims to provide

a universal way of encoding characters of any language, regardless of the computer system, or platform, being used. Although many American users may not see the importance of symbols and alternative character sets, the lack of Unicode support seems shortsighted in an increasingly global marketplace.

Open File. The Open File dialog box allows you to select various options under Last Modified, such as Last Week or This Year, further refining your search for a particular document or type of documents. Although the feature was offered in WordPerfect 10, it sometimes seemed not to work. That's not a problem in the new version.

Publish To PDF. Introduced in the last version, this built-in utility allows users to export files to Adobe Acrobat's PDF (Portable Document Format) without additional software. WordPerfect enhanced this utility for better control over fonts, hyperlinks, output file size, and compatibility with the latest version of Adobe Acrobat—Acrobat 5.0.

Publish To XML. XML (Extensible Markup Language) is the universal format for structured documents and data on the Web. Corel did some serious tweaking to WordPerfect's XML capability, building in suite-wide Publish To XML functionality. This latest version features an improved internal XML editor, giving WP11 users the ability to create, edit, retrieve, validate, and save documents created in SGML or XML. Because XML can be daunting, WordPerfect includes a revamped Help feature to walk users through the process.

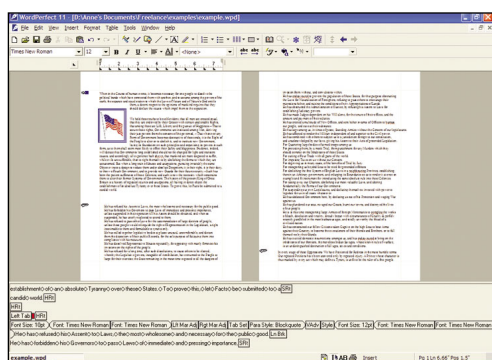
RealTime Preview. RealTime Preview lets you see text fonts and sizes before you apply them to the selected word, paragraph, or document. This lets you try several variations in order to find the best one. The feature previously worked on borders, columns, color fills, frames, justification, outlines, and zoom. With WordPerfect 11, more document modifications work with RealTime Preview. Although not technically RealTime, the bullets and numbering dialog box includes a preview pane, as well.

Reveal Codes. One of WordPerfect's most useful features, Reveal Codes, just got better. A click turns part of the screen over to a somewhat scary representation of your document, revealing all the codes added to your document through formatting. Reveal codes allow you to quickly work out formatting snafus. New to WordPerfect 11 is the ability to print the Reveal Codes. For many people, a printed copy is often easier to decipher and edit. So if you want someone else to take a look and figure out the error of your ways, you've now got an easy method to make a hard copy. Another tweak: Reveal Codes now works in WordPerfect's two-page preview.

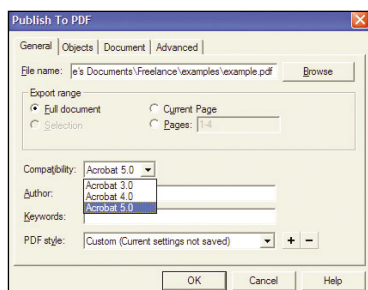
All In All

As you work with WordPerfect 11, you're likely to discover more enhancements to existing features. You may run across a few bugs, as well. It's likely a service pack or other update will be able to solve these minor annoyances. ■

BY ANNE STEYER PHELPS



The Reveal Codes two-page preview doubles your code-hunting pleasure.



Publish To PDF now supports Acrobat 5.0 along with earlier Adobe versions.

Microsoft PowerPoint 2002

Use The Help Files

Presentation

Beginner

2002 for
Win9x/NT
4.0/2000/Me/XP

As far as potential software screw-ups go, PowerPoint doesn't carry much intimidation value. Its built-in tools are fairly intuitive, and it rarely requires you to deal with confusing details. In general, creating a PowerPoint presentation scares most people a lot less than actually stepping in front of an audience to deliver the talk.

That said, harmless, little PowerPoint still presents its share of antacid moments, such as when you're presenting an annual strategy to the CEO tomorrow and you've spent 30 minutes trying to format one graphic on a single slide. That's when a little knowledge of the program's help files is enough to get you over the hump. A quick explanation from Microsoft's built-in instructions is usually enough to clear up the procedure for most tasks.

Pop-Up Help

When you're learning new programs, your most common question is the same one that confronts anyone sitting in an airplane's cockpit for the first time: What do all these buttons do? PowerPoint helps you find your way around the controls. When you point to a button, its

name pops up in a small window. That's no great asset for a button such as the one that italicizes type, but even many experienced users probably can't tell you the function of the button labeled with something that looks like "A/A." (It's the Show Formatting command.)

You can speed up the learning process by adding the command's shortcut key combination to the pop-up label. That way whenever you point to a toolbar button, you'll be reminded that you can press F7 to run the spell checker, for example. To add the key combos to the pop-ups, choose Tools and Customize. On the Options tab, select the box for Show Shortcut Keys In ScreenTips. This tab also is the place to turn off the pop-up ScreenTips labels if you get tired of them.

Another way to get an education merely by pointing to stuff is to head for the Help menu and choose What's This?. A question mark appears beside your pointer, and when you click

certain on-screen tools, a box pops up to explain the function. When you have an afternoon to kill at work, cruise around the PowerPoint screen with the What's This? tool. It's a lot more productive than making your third trip of the day to the fantasy football Web site.

Detailed Instructions

Of course, there are plenty of functions that demand more explanation than simple labels can provide. For detailed help, go to the Ask A Question box in the upper-right corner of the screen. Type a question or just a keyword, and you'll get a list of potential Help topics to read. Clicking one takes you to the official-looking Help window where you'll find detailed instructions on using a feature. Most help topics include underlined words, which you can click to get more information.

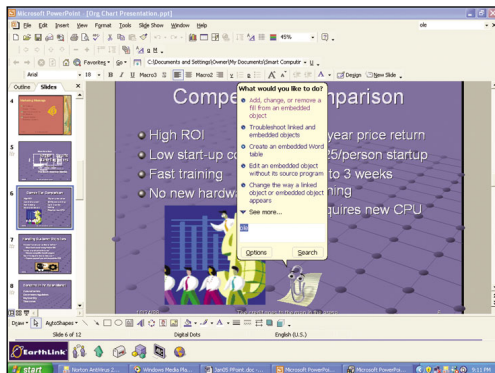
If you choose Help and Microsoft PowerPoint Help, your question goes through the Microsoft Office Assistant, which is a cartoon that was devised as an animated buddy to make you more productive but turned out as something most people find irritating and a little condescending. When you ask for help, the assistant displays a box where you enter a question. The assistant then lists topics it thinks address your question, usually guessing pretty accurately. Clicking a topic drops you into the main Help window.

In the window's Index tab, you'll find a keyword field in the upper-left corner. Entering something such as tables, for example, produces more than 30 references, a few of which are tangential to working with tables. But browsing through the titles will point you to helpful information under headings such as Delete A Table And Its Contents.

The Help window's Answer Wizard tab lets you type a plain-English question such as "How do I add video clips?" and get responses. In reality, typing **video** in the Keyword box of the Index tab produces only slightly less focused results than the wizard tab. The Contents tab sorts tasks into general categories such as printing, putting presentations online, and sharing information.

Whenever you see something in the Help dialog box that you'd like to file away on paper, click the Print button at the top of the screen. ■

BY TREVOR MEERS



When you seek enlightenment through PowerPoint's Help menu, the Office Assistant pops up, takes your question, and suggests help topics.

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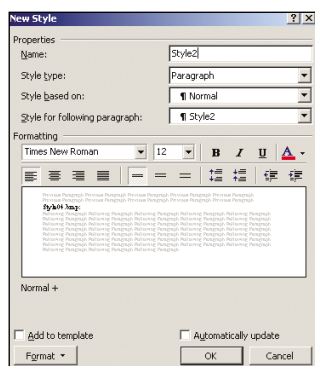
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Microsoft Word 2002

Create A Stylish Document, Part II

Word Processing Intermediate

2002 for
Win9x/Me/NT
4.0/2000/XP



You can fine-tune your styles by designating, for example, font, alignment, and spacing with the New Style dialog box.

Last month, we took a peek at what styles consist of and why they are useful. This month, we look at creating styles.

Microsoft Word 2002 contains more than 100 built-in styles, but even with this abundance of options, you may not find one that fits your needs. Fortunately, it's easy to create your own.

Open a Word document. The easiest way to create a new style is to create a block of text with the formatting you want (by making the appropriate changes to font and type size) and then define it as a style. Click the Style drop-down menu on the Formatting toolbar. Enter a name for the new style and then press ENTER. The new style is now ready to be used.

Delving Deeper

A more thorough way of defining a new style is also available. Click Format and Style And Formatting to bring up the Styles And Formatting pane. Click New Style, and the corresponding dialog box appears. From here, you can define a multitude of formats.

Enter a name for the new style. Choose the style type you want to create via the Style Type drop-down menu: Paragraph, Character, Table, or List. Different formats are available depending on the type of style you choose. We'll stick to Paragraph and Character in this article.

Select Style Based On if there is a pre-existing style that contains formatting similar to what you want to create. Choose Heading 1, for example, if you are going to create a style similar to that style. That way, you have the fewest number of formats to change. The default option is Normal.

Your choice of Style For Following Paragraph determines the formatting to follow the style you are creating. For example, if you create a style called Heading 10, you may want the following paragraph to be a style called Body Text. Do this by clicking Style For Following Paragraph and choosing Body Text from the drop-down menu. When you choose the heading style Heading 10 and press ENTER, Word will apply the style Body Text to any text you type.

Apply the formatting you want the style to contain. Note that you can set more formats with the Paragraph style type than you can with Character. The most common formats are contained in the two rows labeled Formatting in the center of the dialog box. Here you can define the font, type size, and characteristics such as bold, italics, spacing, and indents.

A preview pane shows you what the style will look like. You can select from a more exhaustive list of formats by clicking the Format button. You can also use Word to automatically format text using your styles. You can, for example, have Word create a heading when you type a few words; then press ENTER to go to a new line.

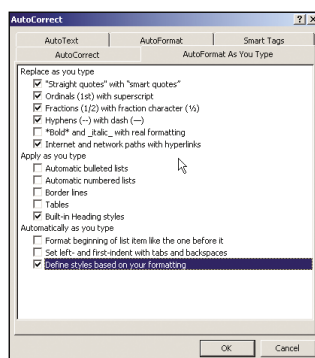
To do this, click Format, AutoFormat, and Options. Click the AutoFormat As You Type tab. Choose from the selections in the Apply As You Type section, such as Built-In Heading Styles, to turn on this automatic formatting. Click OK. Choose to either AutoFormat Now or AutoFormat And Review Each Change. Click OK.

You can save new styles either with the open document (the default) or with the template associated with the open document. By default, the document you create is based on the Normal template. You probably will want to save the style only with the current document if that document is unique and you don't plan on needing the style again. However, if you want to have a particular heading, for example, available to other documents you create with the Normal template, select the Add To Template checkbox in the New Style dialog box.

As we said, you can automatically create a format by formatting a selection of text and defining it as a style. You can also choose to have styles automatically updated by checking Automatically Update in the New Style dialog box. This lets you make a change to a style on-the-fly by selecting a section of text and making formatting changes to it. The changes are then made in all other instances of the style in the document.

That's our tour of Word's style features. They can be timesaving and give your document a distinctive look. ■

BY TOM HANCOCK



The AutoFormat As You Type feature in the AutoCorrect dialog box lets you automatically apply styles.

Browsers

Live Bookmarks In Firefox 1.0

Browsers

Intermediate

Mozilla Firefox

Campaning to keep the browser wars alive, Mozilla's recently released Firefox version 1.0 preview demonstrates the value of some old-fashioned competition. (The Firefox preview might have graduated to a final product by the time you read this; either way, you can download your free copy at <http://www.getfirefox.com>.) Users who have been keeping track of Firefox's development won't see a lot of new features from previous releases, but one interesting avenue worth exploring is its RSS (Rich Site Summary or Really Simple Syndication)-enabled Live Bookmarks capability.

Users accustomed to reading **blogs** (Web logs) or other online content with an RSS **aggregator** (a client program installed on a computer that asks Web sites for RSS feeds, which usually list current site headlines and articles) know that feeds help them keep up with the ever-changing content on a large number of sites. Firefox's Live Bookmarks feature provides a shortcut to RSS content by making your favorite feeds a part of your Web browser's interface, without requiring you to install any additional RSS software.

The best way to use Live Bookmarks is to activate the Bookmarks Sidebar. Open the View menu, choose Sidebar, and click Bookmarks. The Firefox window splits into two panes, with the left pane displaying a list of all your bookmarks. Any Live Bookmarks will display as folders; we found this a bit confusing because there's no way to immediately determine which icons represent actual folders and which ones represent Live Bookmarks.

Click any Live Bookmark folder and its current RSS entries will cascade below just like the contents of a folder. Click an individual RSS post to see the item display in the main Firefox window. Another way to view Live Bookmarks is to keep them in your Bookmarks Toolbar Folder. To move bookmarks around, choose Manage Bookmarks from the Bookmarks menu. Click a Live Bookmark and drag it toward the top into the Bookmarks Toolbar Folder. Return to the main Firefox window, and you'll see the Live Bookmark on the Bookmarks Toolbar. Click it to see the list of RSS entries.

Make It Work

Not every site with an RSS feed will work with Live Bookmarks. Firefox looks for a particular setup that it signifies with the orange RSS emblem in the lower-right corner. If you don't see that little orange icon, there is a workaround you can use if you have a feed address. First, copy the feed address. Second, head to the Manage Bookmarks window and choose an existing Live Bookmark in Firefox. Right-click the Live Bookmark and choose Properties. In the Feed Location field, paste the feed address. Change the name of the Live Bookmark to match the feed address you just entered and click OK. Now try it out; it should work similarly to any other Live Bookmark. Of course, you've just written over an existing Live Bookmark, so you'll need to re-create that one by revisiting the appropriate site and clicking the RSS button.

After using the feature for a while, you may not think that Live Bookmarks is the best way to read news feeds. After all, the system is fairly basic and doesn't offer many (or any, really) customization options. But for casual RSS readers, Live Bookmarks is an easy way to keep up with a few feeds. ■

BY ALAN PHELPS

Add Feeds

Live Bookmarks is a bit of a mystery until you see the first one in action. There's no toolbar command or dialog box to add a Live Bookmark; instead, you must navigate to a site that offers an RSS feed.

For instance, visit one of the original nerd blog sources:

Slashdot (<http://www.slashdot.com>). As soon as the site loads, you'll find a small orange RSS logo in the lower-right corner of the Firefox window. Click it and a one-line menu appears with an option to Subscribe. Click that command and a window opens in the middle of the screen. Click OK. Now try the bookmark. Open the Bookmarks menu and look for the site you just added; it will probably be at the bottom of the list and sport a folder icon. Click the folder icon and a menu will show you all of the available posts. Choose a post to load it in the main browser window.



Activate the Bookmarks Sidebar to see a list of Live Bookmark feeds in the left pane of the main browser window.

Microsoft Access 2002

Learn To Use Cascade Update Tools

Database

Advanced

 2002 for
Win98/Me/NT
4.0/2000/XP

When you create relationships in Access, you have the option of enforcing **referential integrity**, a system of rules that helps ensure the validity of your data. Once you choose referential integrity, you can modify these stringent rules by selecting two options: Cascade Update Related Records and Cascade Delete Related Records. In this tutorial, we'll focus on Cascade Update.

Cascade Update lets you update (edit) a primary key, even though the key is on the one side of a

one-to-many relationship and referential integrity is enforced. These updates will be reflected in related records, which have matching data in the foreign key. (NOTE: *Selecting Cascade Update is irrelevant when the primary key is an AutoNumber field because an AutoNumber field cannot be updated.*)

This tutorial requires you to edit the Northwind database, so we recommend that you make a copy of it. Find Northwind.mdb in the Samples subfolder of your Microsoft Office folder, copy Northwind.mdb to the Clipboard, paste it in another folder, and rename it CopyOfNorthwind.mdb.

Review The Tables

In the Database window, select Tables in the left pane and double-click Customers. The values in the Customer ID field have five characters, based on the customer name. Click the View button to go to Design view. In the first row, note that CustomerID is the primary key with a Text data type. Close the table. Back in the Database window, select Tables and double-click Orders. Note that the second column displays customer names. Click the View button to switch to Design view. Then, click anywhere in the second row, which has the CustomerID field. The Description states that this CustomerID is the "same entry as in the Customers table." So, even though the Datasheet view shows customer names, the actual values in this field are the IDs. In other words, this field *stores* IDs but *displays* names. We want to focus on the IDs, so let's edit Field Properties to display the IDs instead.

In the Field Properties pane, click the Lookup tab and click inside the Display Control field. Choose Text Box from the drop-down menu, click Save, and click View to switch to Datasheet view.

The five-letter CustomerIDs now display in the Customer column. Close the Orders table.

Edit Relationships

In the Database window, choose Relationships from the Tools menu. There's a one-to-many relationship between the Customers and Orders tables through the CustomerID field. The CustomerID in the Customers table is the primary key on the "one side" of the relationship, and the CustomersID field in the Orders table is the foreign key on the "many side" of the relationship. Double-click the line between Customers and Orders. From the Edit Relationships dialog box, select Customers from the Table Query drop-down menu. There are check marks next to Enforce Referential Integrity and Cascade Update Related Fields. Deselect the Cascade Update Related Fields checkbox, click OK, and close the Relationships window.

Next, open the Customers table. In the first row, edit the five-letter Customer ID for Alfreds Futterkiste to change it to ALFTT. Click anywhere in the second row, and you should see an error message appear indicating that Access won't let you edit the primary key because referential integrity is enforced and there are related records in other tables. Click OK. Now try clicking the X in the window's upper-right corner. The same error message will appear; click OK. You'll then see another message stating that you can't save the record at this time. Click Yes to close the table. As noted, referential integrity was enforced so you couldn't edit a primary key.

In the Database window, click Tools and Relationships. Double-click the line between Customers and Orders. Select the Cascade Update Related Fields checkbox, click OK, close the Relationships window, and open the Customers table. In the first row, again try to edit the five-letter Customer ID for Alfreds Futterkiste to ALFTT. Click in the next row and note that no error message appeared this time. Because you selected the Cascade Update Related Fields checkbox, you can edit the primary key. Save your change and close the Customers table.

Select Tables in the Database window, double-click Orders, select the entire Customers column, and click the A-Z button. As you can see, the ID for Alfreds Futterkiste has been updated to ALFTT to reflect the change you just made. ■

BY BOB SCHNEIDER

Quick Tips

Secrets For Succeeding In Common Tasks

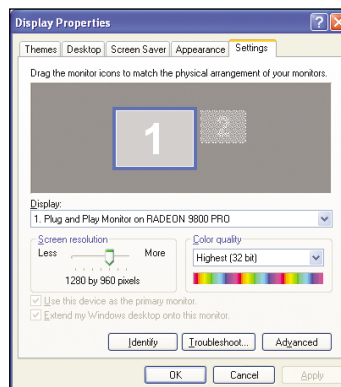
Question: I exchanged my black ink cartridge for the color cartridge, but my printer's LEDs (light-emitting diodes) are blinking and the unit won't print. What's the problem?

Answer: Chances are that you've improperly installed the color cartridge. Remove the color cartridge and look at the array of electrical contacts that connect the cartridge to the printer. If you're installing a new color cartridge, be sure to remove the protective tape covering the nozzles and contacts. Also make sure to fully insert the color cartridge. In most cases, the cartridge drops into a carriage and then pushes back where it locks into place (you often hear a little click), so try reinserting the cartridge. If it doesn't lock into place, check that you're using the correct color cartridge model. If the trouble persists, try cleaning the electrical contacts with a little isopropyl alcohol on a cotton swab.

Question: I'm playing a computer game in windowed mode, but the window is bigger than my monitor. I wind up dragging the window back and forth to see the entire image. What did I do wrong?

Answer: In all likelihood, your Desktop settings are smaller than the minimum resolution needed to run your game. For example, if your Desktop is set to 800 x 600, but the game uses a minimum resolution of 1,024 x 768, the game's window will be larger than your Desktop. You don't see this happen in full-screen mode because most games change the display

resolution to accommodate the game. If you must run the game in a window, try increasing your Desktop size by increasing your resolution. Simply right-click an empty spot on your Desktop, select Properties, and choose the Settings tab. Slide the Screen Resolution slider to the right to select a higher resolution and then click Apply and OK. Now try your game again.



Select a Desktop resolution that will accommodate the window sizes of your important applications.

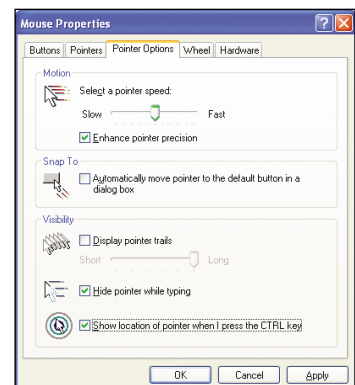
Question: Is it safe to leave my laptop in the car while I visit with clients? I've heard conflicting opinions on this.

Answer: Security and environment are two important factors. Obviously, laptops are easy targets for thieves, so if you must leave a laptop in the car (even for short periods), be sure to cover the laptop, slide it under the seat, or otherwise keep it out of sight. Even when your car is in a safe place, however, extremes of summer heat or winter cold can have devastating effects on a delicate laptop. Cold can freeze the liquid in your LCD (liquid-crystal display), causing cracks and ruining the display.

Heat can warp plastic housings. And sudden changes in temperature (such as taking a cold laptop into a warm office) can cause condensation that could eventually ruin the unit. As a rule, avoid leaving a laptop in a car exposed to extreme temperatures for more than 30 minutes.

Question: My father is new to computers, and he has a terrible time finding the pointer. Is there a way to make it easier to find?

Answer: Yes, there is. OSes (operating systems) such as Windows XP provide accessibility features that are designed to assist the vision and hearing impaired. The mouse provides a locator that can be very handy in locating small pointers. Click Start, Control Panel, Printers And Other Hardware (in Category View), and Mouse. Select the Pointer Options tab and check the Show Location Of Pointer When I Press The CTRL Key box. Click Apply and OK. Now just press the CTRL button whenever you lose the pointer: A visual cue (concentric rings) will briefly appear to help you locate the pointer. If he tends to lose the pointer as it's moving, try selecting the Show Pointer Trails checkbox, as well.



Vision-impaired users can employ a simple visual cue to help locate hard-to-find mouse pointers.

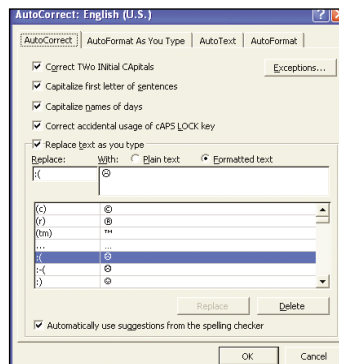
Question: My son put a password into the system startup routine (before Windows even starts) and proceeded to forget the password. How can I access the PC to clear this up?

Answer: Most system setup routines allow for a password, but a lost or forgotten password can render the system unbootable. Fortunately, a few handy tricks can help a frustrated parent recover the system. The easiest tactic is to check your system documentation to locate a Password Clear or CMOS Clear jumper on the motherboard. If your motherboard incorporates such a feature, you can easily clear the password (or all CMOS [complementary metal-oxide semiconductor] RAM contents, including the password) just by setting the jumper and powering up the system. Once the data is clear, you can reset the jumper and restart the system. (Clearing CMOS RAM contents completely will simply cause the system to use default values the next time that system restarts.) If you cannot locate a password or CMOS clear jumper in the documentation, contact the PC manufacturer's technical support department for additional instructions. Once the CMOS password is cleared, system startup should skip the password and your system should boot to Windows normally.

Question: I type a lot of colons and parentheses in my work documents, but Word constantly changes them into smiley icons. Is there any way to stop this?

Answer: Word processors such as Microsoft Word automatically convert certain key sequences into equivalent icons or symbols. For example, typing tm

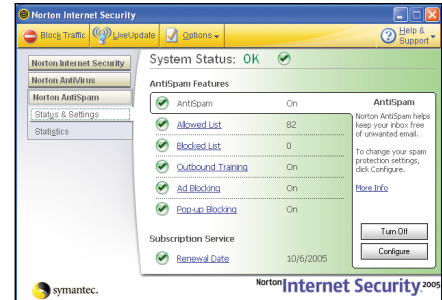
in parentheses will cause Word to automatically replace it with a superscript equivalent that looks better in print. For example, the phrase "mywidget (tm)" would become "mywidget TM." Word will also convert common chat sequences into icons. For example, the common "smiley" :) would become J. If you wish to prevent Word from automatically replacing your key sequences, simply click Tools and AutoCorrect Options. Deselect the Replace Text As You Type box to prevent all of the common replacements, or just highlight the undesired replacement and click Delete. Remember to click OK to save your changes.



Word allows users to prevent or alter automatic key sequence replacements.

Question: I change my email address every few months, but I still wind up being deluged with junk mail. How can I stop this?

Answer: In spite of recent legislation intended to reduce the spate of unwanted email (such as the CAN-SPAM Act), spam continues to be a serious problem for home and business users. Although it's unlikely that spam will go away any time soon, an



Tools such as Norton Internet Security often include antispam features that help to isolate unwanted emails and keep them from your inbox.

antispam utility may be just the ticket to protect you in the near term. Products such as Norton Internet Security (\$69.95; <http://www.symantec.com>) integrate with your email client, detecting and deleting messages from known spam senders. You can also designate other unwanted messages as spam, thereby tailoring the software to target other sources of spam. Some antispam software also helps to protect against unwanted ads and pop-ups that often plague Web browsers. An increasing number of ISPs (Internet service providers) are also including antispam software with their service offerings, so check with your ISP for its suggestions and assistance. Here are some tips that may help to reduce your spam. First, be very protective of your email address. Users who frequently submit their email addresses for newsletters and the like often receive more unwanted email because such senders often sell or share email addresses with other spammers. Only submit your email address to trusted online vendors. Also, be leery of opt-out spam. This is often a tactic used to verify your email address and often results in even more spam. ■

BY STEPHEN J. BIGELOW

PHILIPS



Experience television in a whole new light.

Turn on the new flat TV from Philips with Ambient Light Technology, and watch what happens. Your eyes see more than what's on the screen, as color and light expand beyond the frame and onto the walls. You bask in the warm glow of the background lighting that automatically changes color and intensity to reduce eye strain and provide a more relaxed viewing environment. And with Pixel Plus™ 2, you experience the detail and vivid colors that are as close to real life as you can get. For a deeper view of the entire Philips Flat TV™ line, featuring Ambient Light Technology, and to find the retailer nearest you, check out www.flattv.philips.com. It's unlike anything you've ever seen before.



Conjunction Junction

Uncommon Connections For Your PC

Oh, sure, you probably have a printer connected to your computer. Maybe even a scanner or a camera. An external drive? Maybe. Speakers? Probably. But these are so... common. There are dozens—perhaps hundreds—of things out there that you can interface with your PC that you may not even have thought about. We don't have the space to explain in detail how to connect each of these items to your computer, but we can show you some of the possibilities.

GPS Units

By definition, GPS (global positioning system) units are digital devices, so it's no surprise that they can be interfaced to a computer; many are sold just for that purpose. But here's what you may not have realized: Today's GPS devices output data in NMEA (National Marine Electronics Association) format, following a protocol developed by a consortium of electronics vendors. The data format is well-known and fairly stable: Each NMEA "sentence" begins with a \$ followed by records (separated by commas) that detail (in the case of GPS) such things as current latitude, longitude, speed, and altitude. You can connect the output of an NMEA device to a serial or USB (Universal Serial Bus) port and read that data using Windows' HyperTerminal program. From there you can import it into Excel or any other software that can read comma-delimited text.

This Garmin GPSMAP 76C handheld unit (top: \$535.70; <http://www.garmin.com>) can be connected to a PC to download map data, and it can output NMEA-format data to be read by an application of your choice. Similarly, the little Pharos GPS unit (bottom: included with Microsoft Streets & Trips 2005, \$39.95; <http://www.microsoft.com/streets>) can connect to either a PC or handheld device.

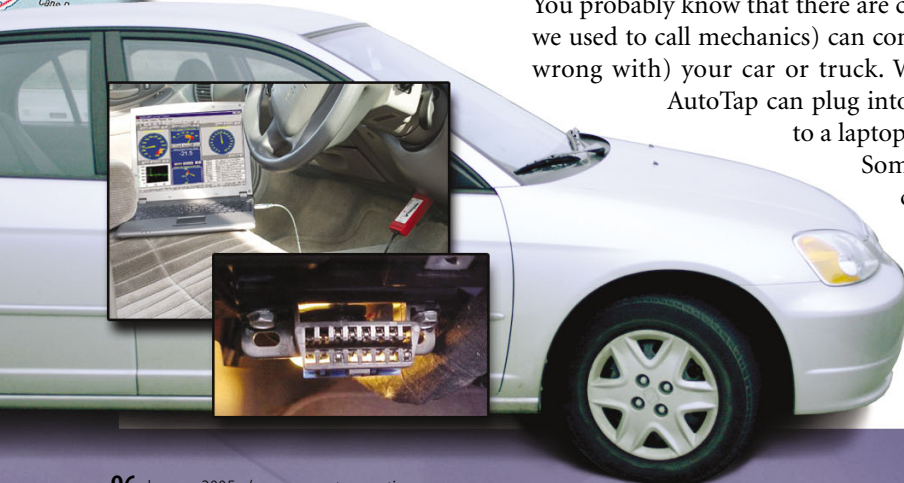
Your Automobile

You probably know that there are computers in your car and that automotive techs (what we used to call mechanics) can connect to these computers to see what's going on in (or wrong with) your car or truck. Well, so can you. Such products as B&B Electronics'

AutoTap can plug into the OBD-II connector under your dash and connect to a laptop or PDA (personal digital assistant) as a diagnostic aid.

Some of these will also let you program the car, making changes and turning the Check Engine light on or off.

B&B Electronics' AutoTap for Windows (\$199.95; <http://www.autotap.com>) is a handy way to connect your PC or laptop to the OBD-II connector in your late-model car so you can perform computer-aided diagnostics.



Musical Instruments

Of course you can play music through your computer, but you can also make music *with* your computer. One way to do that is to connect an instrument to your PC, either directly or through a MIDI (Musical Instrument Digital Interface) or other adapter. Fittingly, in these days of Web-enabled everything, this Yamaha keyboard can actually connect to the Internet to download tunes, sounds, sheet music, and software updates.

The Yamaha PSR1500 (pictured: \$1,295.95; <http://www.yamaha.com>) is one of a new breed of data-enabled musical instruments that can connect to your PC or directly to the Web. More affordable, but less full-featured, options include the Edirol PCR-1 MIDI keyboard (\$370; <http://www.edirol.com>) and Roland's A-37 76-key MIDI board (\$495; <http://www.roland.com>).

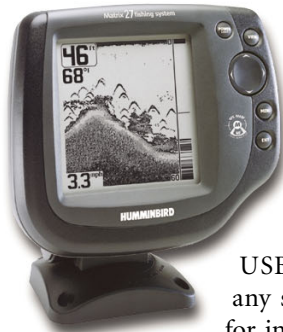


Sonar/Fishfinder

Like GPS units, modern fishfinders (and similar sonar and radar devices) output NMEA data, which can be sent to a serial or USB port and accessed by any software that can check for incoming serial data. Why

bother? Well, to take one example, fishermen are using the technique to log the locations of their favorite fishin' holes, time of day, number and type of fish spotted, and other such outdoorsy stuff—even if those logging features aren't built into their devices.

This Humminbird fishfinder (\$348; <http://www.humminbird.com>) outputs NMEA data that can be used by a PC or laptop. You can also connect an NMEA GPS unit to the device and then connect both to your computer with only one cable.



Your Wireless Phone

They rarely tell you this at the phone store, but it's possible to use a data cable and proprietary software to connect most wireless telephones to your PC. Once you've done so, you can save your phone's address book to the PC, sync the phone with your email contact list, and so on. (You may even be able to move one phone's address book over to a new phone.) The cable and software are usually available at additional cost. They may not work with all email applications, so check before you buy.

The data cable and software for your phone can usually be purchased at your phone vendor's store or Web site. We found that some third-party stores offer discounts (cable, \$26.95; software, \$34.95; <http://www.westsidcellular.com>).



Your Home

The computer-controlled home has been a staple of science fiction for many years. Well, reality is finally beginning to catch up to fiction: You can now connect various types of control modules to your thermostat, lights, appliances, garage door, and more and control these devices with a computer. The X10 devices use what is probably the best-known home control protocol, but there are several others.

Connect your home to your PC with X10 appliance modules (\$12 to \$30; <http://www.x10.com>). X10's ActiveHome Pro Ultimate System starter kit runs \$99.99 and includes the data interface cable and software, a controller panel, several appliance and lamp modules, and a motion detector.



Backup Solutions: An End To The Confusion

I recently wrote a column recommending that readers use a drive-imaging tool as a disaster recovery solution. In a separate article, I evaluated four drive imaging products and concluded that Norton Ghost and Acronis Tru Image are the two most efficient, reliable drive imaging tools on the market.

This caused a number of readers to inquire: Why do I need a drive imaging tool? Can't I just use System Restore or Norton GoBack to recover from computer disasters?

I saw enough confusion in these letters to warrant a column explaining the differences among System Restore, Norton GoBack, and drive imaging tools.

System Restore is a limited disaster recovery tool that automatically takes snapshots (called Restore Points) of critical system files whenever you make a significant change to your computer. If a change precipitates a disaster, you can restore your computer to the point just prior to the change.

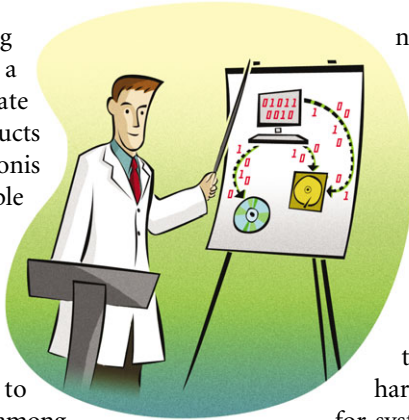
Norton GoBack, according to its product manager Bill Rosenkrantz, is "like System Restore on steroids." Whereas System Restore only backs up specific critical system files, Norton GoBack tracks *every* change to your hard drive. This means that you can recover old versions of documents, as well as restore your critical system files to a previous, stable state.

Another advantage that Norton GoBack has over System Restore is that you can access Norton GoBack before your system boots into Windows, which is important if for some reason you are *unable* to boot into Windows.

Whereas System Restore calls its recovery points Restore Points, Norton GoBack calls its recovery points Safe Points. Both tools allocate a certain amount of space on your hard drive to store recovery/safe points, and both tools automatically purge older recovery/safe points when the allocated space is nearly consumed.

System Restore and Norton GoBack share another attribute: The recovery and safe points are stored on the system partition of your hard drive. This means that these points are lost in the event of a hard drive crash.

Both System Restore and Norton GoBack are good tools. But neither of them provides as thorough a solution as a drive-imaging tool. Neither product will enable you to recover from a hard drive failure. Drive imaging tools enable you to recover from hard drive failures because A) they create an exact image of your hard drive, and B) the drive image is always stored on some media other than your primary hard drive, for example, a second internal hard drive, a USB external hard drive, or CD/DVD media. Additionally, you do



not have to be able to boot into Windows to restore a drive image to your hard drive. Thus, you can "restore" a drive image to a new, unformatted hard drive.

Selecting A Tool

So, which tool is right for you? According to Rosenkrantz, it depends on your level of sophistication and your willingness to protect against computer disasters. I don't entirely agree. A few years ago, hard drive imaging tools were designed more for system administrators than end users in that they were difficult to understand. They have since evolved into more mainstream, user-friendly, wizard-driven tools that are well within the intellectual grasp of most computer users.

It's worth noting that you can use both a drive imaging tool *and* System Restore or Norton GoBack. This combination might be desirable if you are creating drive images on CD/DVD media. Although you *should* take a drive image every day, this can be difficult to do if you are backing up to CD/DVD because A) the backup process must be attended because you need to insert a new disc when the old one is full, and B) writing to CD/DVD media is much slower than writing to a hard drive.

If you are unable to take a drive image every day, it would be useful to supplement a drive imaging solution with System Restore or Norton GoBack because these products provide recovery/safe points that might help you recover to a more recent system configuration than your most recent hard drive image.

For the record, I have gone in the opposite direction. I take a drive image every day—sometimes more than once a day depending on what changes I am making to my computing environment—so I have turned off the Windows System Restore feature. This saves space on my hard drive and reduces the amount of time required to take a drive image.

System Restore and Norton GoBack are easy to use and will help you recover from many types of disasters, but only a drive imaging tool provides a complete, foolproof disaster recovery solution. ■

BY ALAN LUBER

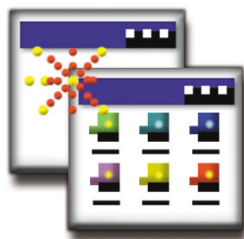
Alan Luber is an author and computer expert. His new book, "PC Fear Factor: The Ultimate PC Disaster Prevention Guide" (Que Publishing), provides an in-depth look at disaster prevention and recovery. To learn more or to contact Alan, visit his Web site at <http://www.pcfearfactor.com> or email alan@smartcomputing.com.

Examining Errors

BY JEFF DODD

Problem: Every time a reader starts his PC, he receives an error message. The reader reports that his computer is running Windows Me.

Error Message:
“Scancomp.dll will not open.”



Solution: When an error message indicates that the problem lies with a particular file, you can safely assume that the file is missing, corrupted, or otherwise out of commission. The reader can deal with this particular error by replacing the troublesome Scancomp.dll file with a healthy one. He'll locate the file by selecting Search from the Start menu, clicking For Files Or Folders, typing **Scancomp.dll** in the Search For Files Or Folders Named field, and clicking Search Now. When he sees the Scancomp.dll file appear in the Search Results pane, he can right-click it and select Delete. He should click Yes to verify that he wants to remove the file from his computer.

Next, the reader needs to install a new copy of Scancomp.dll. He can do so by repairing his copy of McAfee VirusScan, which we

suspect is responsible for loading the Scancomp.dll file on his computer. To repair the installation, the reader should open the Control Panel and double-click the Add/Remove Programs icon. A list of installed programs will appear below the Install/Uninstall tab; the reader should select VirusScan in this list and click the Add/Remove button. When the uninstall utility opens, he should follow its instructions and opt to repair the installation rather than uninstall the antivirus program. The utility will load a new copy of the Scancomp.dll file and make any other necessary corrections to the program.

When the repair is complete, the reader can restart his computer and check for the error message. Hopefully, he won't see it again.

Problem: Each time he boots his computer, a user of Windows XP SP1 (Service Pack 1) receives a pair of error messages. By closing the messages, he can continue working without experiencing any difficulties.

Error Message: “Can't run 16-bit Windows programs.” and “Insufficient memory to run this application. Quit one or more Windows applications and try again.”



Solution: Neither of these messages is particularly uncommon when it appears alone, but the combination of these two messages certainly represents an unusual situation. We don't have a sure-fire solution, but we can recommend a few steps that may eliminate at least one—if not both—of the errors.

The best initial response is to download WinXP SP2 (Service Pack 2) from <http://www.microsoft.com/athome/security/protect/windowsxp/choose.aspx> and follow the on-screen instructions. WinXP SP2 is a free download that enhances security and repairs countless deficiencies in WinXP SP1. SP2 may rectify all of the reader's problems, but he should keep in mind that it can be a monster to install. He and other *Smart Computing* subscribers have online access to an article *CPU* magazine published about SP2 at <http://www.computerpoweruser.com/cpunov04/winxpsp2>. We also must advise the reader to consider whether his system has enough memory for WinXP and all of his software. Microsoft recommends a minimum of 128MB of RAM for WinXP, but the reader may need significantly more if he runs video-editing apps, disc-recording software, high-end games, or publishing programs. We also recommend verifying that the virtual memory settings are configured for optimum performance. The reader can check these settings by opening the Start menu,

right-clicking My Computer, and choosing Properties. Below the Advanced tab, he should locate the Performance heading and click the corresponding Settings button. From the next dialog box, he should choose the Advanced tab and click Change below the Virtual Memory heading. From the Virtual Memory dialog box, he should select the **Windows drive** (the drive where WinXP is installed) in the Drive field, click the System Managed Size option, and click OK to close the dialog boxes.

The error message indicates that the reader's PC is trying to run a 16-bit Windows program, so he also should ensure that his system is configured to accommodate the 8.3 file-naming format, which limits DOS-based file names to eight characters or less. He can do so from the Registry Editor. (*NOTE: Be careful as you make changes to the Registry and back up your system beforehand.*) From the Start menu, select Run, type **regedit** in the field, and click OK. When the Registry Editor opens, he should locate HKEY_LOCAL_MACHINE\SYSTEM\CURRENTCONTROLSET\CONTROL\FILESYSTEM and make sure the NtfsDisable8dot3NameCreation value, if present, is set to 0. If it isn't set to 0, he can right-click the value, select Modify, and type **0** in the Value Data field of the resulting dialog box. He then should click OK, close the Registry Editor, and reboot his PC.

Problem: A WinXP user complains of receiving a frequent error message on his PC, and he isn't familiar with the file referenced in the message.

Error Message: "Error loading C:\PROGRAM FILES\WILD TANGENT\APPS\CDA\Cdaengine0440.dll. The specified module could not be found."



Solution: Cdaengine0440.dll is a file designed to facilitate the delivery of content from the Internet to the PC. The reader most likely acquired the file by installing a WildTangent product (probably a game) or surfing the Web. After consulting a WildTangent support guru, we learned that the best solution is for the reader to remove any reference to the file from the Windows Registry (a database of user preferences and system settings). He can do this with a little help from the Registry Editor. (*NOTE: Whenever you make changes to the Registry, proceed with caution and make sure you back up your system first. One wrong move could leave your system inoperable.*)

To access the Registry Editor, the reader will need to open the Start menu, select Run, type **regedit** in the field, and click OK. In the Registry Editor window, the reader should go to HKEY_LOCAL_MACHINE\SOFTWARE\

MICROSOFT\WINDOWS\CURRENT-VERSION\RUN and search the Run key's contents for any value that references a WildTangent file. If he finds such a value, he should right-click it, select Delete from the pop-up menu, and click Yes. He then can close the Registry Editor and reboot his system to make the change complete.

The only thing left to do, assuming the reader wants to continue using his WildTangent software, is to download and reinstall the recently deleted file. He can do so by visiting http://www.wildtangent.com/default.asp?pageID=webdriver_download, following the on-screen instructions, and rebooting his PC when the installation is complete.

These instructions should take care of the error message; but if they don't, the reader should access WildTangent's Support site at <http://support.wildgames.com> and request further assistance.

Problem: An energetic reader reports that he had a dual-boot system running both Windows 98 and Windows 2000 when he decided to use PartitionMagic Pro 6.0 to repartition the drive so that it could accommodate a third OS (operating system). After installing WinXP in this new partition, the reader tried to boot Win2000 and received an error message. The reader reports that he can successfully access WinXP and Win98 without any problems.

Error Message: "Windows could not start because the following file is missing or corrupt: <Windows root>\SYSTEM32\Hal.dll. Please reinstall a copy of the above file."

Solution: The first thing the reader should do is ensure that the partition on which he has installed Win2000 has a capacity of more than 7.8GB. Win2000 is unlikely to function properly if it's installed on a partition smaller than that. If necessary, the reader can use his partitioning software to re-create the Win2000 partition and reinstall the OS.

Having said that, we think the error message is most likely the result of a missing or corrupted Hal.dll file, which is a file that Win2000 uses to communicate with various hardware components inside the PC. This file has a tendency to get mangled when users attempt to install another OS—in this case, WinXP—after previously installing Win2000. Fortunately, the reader should be able to rectify the problem by repairing the Win2000 installation. To do so, he can insert the Win2000 installation disc or 3.5-inch diskette in the computer and reboot the machine. A Welcome To Setup screen should appear; the reader can press the R key at this point to access the Windows 2000 Repair Options screen. He should press the R key again to activate the

emergency repair process. He then should press the F key to perform a full repair of the installation and replace the damaged Hal.dll file. After the repair is complete, the reader can reboot his PC. He should be able to access Win2000 without any difficulties now.

If that doesn't work, the situation requires a much more complicated solution that varies depending on the type and configuration of the processor involved. We advise the reader to contact his computer manufacturer for further assistance. ■



Have questions about an error message you've seen? Send us your message (errormessages@smartcomputing.com), and we'll try to decipher it. Tell us what version of Windows you're using, give the full text of the error message, and provide as many details in your explanation as possible. Volume prohibits individual replies.

Fast Fixes

Ulead DVD Workshop 2.0 Update Pack

Problem: Your computer experiences problems that lead to crashes, odd program behavior, and/or difficulties with various file types while using Ulead DVD Workshop 2.0.

Solution: Download and install this 16.3MB update pack from Ulead to resolve multiple problems. To download this update, type the URL (uniform resource locator) we listed below in the Address field of your browser window. After the company's site loads, point to Free Downloads and click Updates & Patches. To the right of Ulead DVD Workshop, click Updates & Patches. Scroll down until you see Ulead DVD Workshop and click the Updates & Patches link next to it. From the chart at the bottom of the following page (next to English and below Download), click the link for Site 1 or Site 2. If you use a dial-up connection, this transfer might take hours to complete. Double-click the file (Dws2patch4_e.exe) to install the update. ♦

<http://www.ulead.com>

Windows 2000 Security Update

Problem: A flaw in Windows 2000 could let a cracker attack a computer running Microsoft Internet Information Services and cause it to crash.

Solution: Download and install this 905KB patch to prevent an attack. To download the update, type the URL we listed below in the Address field of your browser window. After Microsoft's Download Center page loads, type KB824151 in the Keywords text box and click Go. Click the link named

Security Update For Windows 2000 (KB824151), which has a date of 10/13/2004, and on the right side of the page, click Download to begin the file transfer. When the file transfer is complete, double-click the file (Windows2000-KB824151-x86-ENU.exe) and follow the on-screen prompts to complete the installation. ♦

<http://www.microsoft.com/downloads>

Office XP Security Update

Problem: An attacker could use a certain type of image file to run malicious code on a computer running Office XP.

Solution: Download and install this update, which will help protect your computer from these kinds of attacks. To download the update (which can be up to 6MB in size, depending on your computer's update status), type the URL we listed below in the Address field of your browser window. After Microsoft's Download Center page loads, type KB832332 in the Keywords text box and click Go. Click the link named Office XP Security Update: KB832332, and on the right side of the page, click Download to begin the file transfer. Follow the on-screen prompts to complete the installation. ♦

<http://www.microsoft.com/downloads>

Office XP Update

Problem: Your computer experiences various errors or functionality problems with Office XP.

Solution: Download and install this update, which Microsoft recommends for all Office XP users. To download the update, which can be up to 4MB in size, type the URL we listed below in the Address field of your browser window. After Microsoft's Download Center page loads, type KB837253 in the Keywords text box and click Go. Click the link named Office XP Update: KB837253, and on the right side of the page, click Download to begin the file transfer. Follow Microsoft's on-screen prompts to complete the installation. ♦

<http://www.microsoft.com/downloads>

Fix Of The Month

Windows Media Player For Windows XP Patch

Problem: While using Windows Media Player for Windows XP, you see this error message appear on-screen: "erro0xC00D11B4 - - Windows Media Player cannot restore your licenses because no backed up licenses were found on your computer."

Solution: Download and install this 549KB update to resolve the problem. To download the update, type the URL we listed below in the Address field of your browser window. After Microsoft's Download Center page loads, type KB886610 in the Keywords text box and click Go. Click the link named Hotfix: Windows Media Player For Windows XP (KB886610), and on the right side of the page, click Download to begin the file transfer. Double-click the downloaded file (Windows-Media8-KB886610-x86-ENU.exe) and follow the on-screen prompts to complete the installation. ♦

<http://www.microsoft.com/downloads>

Q&A

*Need help with
your hardware
or software?*

*Looking for simple
explanations
on technical
subjects?*

*Send us
your questions!*

Get straight answers to your technical questions from *Smart Computing*. Send your questions, along with a phone and/or fax number, so we can call you if necessary, to: *Smart Computing* Q&A, P.O. Box 85380, Lincoln, NE 68501, or email us at q&a@smartcomputing.com.

Please include all version numbers for the software about which you're inquiring, operating system information, and any relevant information about your system. (Volume prohibits individual replies.)



Online

Q I am wondering what is going on with my email. Every day I get mes-

sages from a mailer daemon or a mail administrator saying that my email couldn't be delivered. The trouble is that they refer to messages I haven't sent to addresses I'm not familiar with. I thought this might be a virus, but I scanned with Norton AntiVirus and found nothing. I also checked with Ad-aware and Spybot S&D, but found nothing. I also use ZoneAlarm. Could this be another form of spam?

A You're probably experiencing one of two things. The first possibility is that someone is sending email that lists your email address as the sender. The most likely explanation for this is a spammer trying to slip junk mail past a spam filter. Spammers send email to millions of addresses, and some of these addresses are invariably no longer in use. When the junk mail arrives at the mail server responsible for these defunct addresses, the mail server sends an undeliverable notification to the address of the sender (you).

There's even a name for this tactic, Joe Job. The idea is to spoof the mail server with your valid address. Unfortunately, there's not much you can do except delete the notification from the mail server.

The other possibility is that your email address is listed on a virus-infected computer. For example, if you're listed in a friend's email address book, and your friend's computer gets infected, the virus may use the addresses in your friend's address book to send copies of itself. Many viruses will use the same spoofing tactic described above to increase their chances of spreading.

As with the first explanation, there's not much you can do to prevent these emails from being sent. Until your friend removes the virus from his system, it will continue to try to propagate in the manner described.



Utilities

Q Is it advantageous to have more than one antivirus program installed

on a computer? I have Norton System Works, version 2002.05 (8.07.17C) on my desktop (Windows Me). On my laptop (Windows XP), I have Norton AntiVirus Version 8.07.17C installed. I keep both up-to-date through automatic and manual updates. My laptop became infected with four virus/worms: W32.Spybot.Worm; W32.Sasser.E.Worm; W32.Bobax.C; and W32.Korgo.Q. (I do not open any attachments or download from unknown sites.) When running Norton on a weekly basis along with its One Button Checkup, the report has always been clean (nothing infected, nothing repaired). How can I tell if my desktop PC has a virus? It, too, is clean, according to Norton, and I do not receive any pop-up virus notices like the ones I got on my laptop when it was online.

A Our recommendation is to only run one antivirus application on your computer. There are several reasons for this, but the most important one is that running multiple antivirus applications won't improve your computer's protection against viruses and worms. To illustrate why, it's important to understand how viruses and worms spread and how antivirus software works.

Viruses and worms propagate by trying to infect vulnerable computers. The vulnerabilities these programs seek to exploit vary

according to the version of Windows you're running, as well as the applications you use. In the past, most viruses were spread by email. You'd receive an infected email and click the attachment, and your PC was instantly infected.

Nowadays, your computer can be infected simply by viewing an email, visiting a Web site, or using your computer without a firewall. Viruses and worms scan the Internet, probing for computers that are vulnerable to attack. Some studies have shown that an unprotected computer running Windows can expect to be infected in less than five minutes.

AV (antivirus) software is a valuable tool for protecting your computer, but it is not sufficient by itself. When a new virus surfaces on the Internet, AV software vendors scramble to create a virus definition that enables their software to identify the new virus. When you update your AV software, you're downloading and installing the newest virus definitions. Unfortunately, this is a game where the virus creators are ahead of the AV vendors. Modern viruses and worms can propagate very quickly, often before the AV vendors can create a virus definition. Most reputable vendors release updates at approximately the same time, so there wouldn't be an advantage to running two different AV programs simultaneously.

Instead, we recommend a four-pronged approach to protecting your computer. First, purchase the latest edition of the AV program you're most comfortable with. Newer programs use heuristic technologies that try to detect virus-like behavior. Also, newer versions are usually updated with new definitions a bit sooner than older, legacy versions. Configure your AV software to scan all of your email and any file that you open.

Second, use a firewall to protect your computer. This can be a software-based program that runs on your computer or a hardware device, such as a router or gateway, that sits between your computer and the Internet. This will protect your computer from being attacked through the Internet.

The third tactic is to use a spyware/adware-detector program. These programs will scan your system for any spyware or adware that was surreptitiously put on your system while you surfed the Internet. Our recommendation is Spybot S&D (<http://www.safer-networking.org>), a free program that does an excellent job of keeping out unwanted programs.

Last, keep Windows and all of your applications up-to-date. This means applying the most recent Service Pack for your version of Windows, as well as any updates to your applications. You can learn more about keeping Windows up-to-date by visiting <http://windowsupdate.microsoft.com>.

If your version of Norton has the latest virus definitions and is giving your desktop computer a clean bill of health, you can rest easy. However, don't let your guard down, as

the arms race between virus writers and AV vendors shows no signs of cooling off.



Online

Q I'm presently using Outlook Express 6.0 with Windows XP Home Edition. I can open my emails and attachments and read them without any problems; however, I cannot open hyperlinks within the message. Shouldn't Internet Explorer automatically open? If I cut and paste the link into IE, it opens without incident. How can I get IE to open when I click the hyperlink?

A This phenomenon usually occurs when another program has been configured as the default browser for your computer. This might occur when you install Netscape or any other alternative browser. Normally, that browser would open the hyperlinks, but if you've subsequently removed it, Outlook Express doesn't know what to do with the hyperlink.

To fix this, click Start, Settings, and Control Panel. Double-click Internet (or Internet Options) and then Programs. Make sure that the Internet Explorer Should Check To See If It Is The Default checkbox is selected. Click Apply and OK. Next, launch IE, and when prompted with Internet Explorer Is Not Currently Our Default Browser. Do You Wish To Make It The Default?, click Yes.



Word Processing

Q I recently purchased a Dell laptop that came equipped with WinXP Home Edition. I am disappointed that it didn't come bundled with Microsoft Word. A store clerk said that I cannot purchase and install the upgrade Microsoft Office version and I must purchase the full version. There is a considerable difference in price. Is this correct?

A The clerk you spoke with is correct. Upgrade versions require that you own an earlier version of Word or Microsoft Works. The retail price for Word 2003 is \$229, while the upgrade lists for \$109. If you have an earlier version, you can usually use it to satisfy the requirement. Otherwise, you'll need to pony up for the full version.

However, purchasing Word by itself may not be the most economical strategy. The most affordable version of Office is Office Student And Teacher Edition 2003, which retails for \$149. This includes Word 2003, Excel 2003, Outlook 2003, and PowerPoint 2003. If you don't qualify for this version, the Standard version retails for \$399.

One alternative you might want to consider is OpenOffice (<http://www.openoffice.org>). OpenOffice is a

suite of programs similar to what Microsoft offers in Office. OpenOffice features Writer (similar to Word), Calc, (a spreadsheet program like Excel), Draw, (a graphics tool), and Impress (a presentation tool similar to PowerPoint).

OpenOffice is also capable of working with file formats common to Microsoft Office. Word documents are usually interchangeable with Writer documents, and Calc can interoperate with Excel. In both look and usage, OpenOffice is quite similar to Microsoft Office, and in our experience, making the switch isn't that difficult. The best feature of OpenOffice is its price; OpenOffice won't cost you a dime. You can download the latest version (as of press time, OpenOffice 1.1.3) or order the CD (prices vary depending on retailer). The Windows version is 45MB, which will take approximately 15 minutes to download over a 56Kbps (kilobits per second) modem connection.

OpenOffice doesn't include any support other than its Web site and several mailing lists, so if you feel you need a product that will deliver dedicated support, you'll want to consider OpenOffice's sibling, StarOffice 7 is the commercial version of OpenOffice, developed and distributed by Sun Microsystems (\$39.95 download, \$75.95 box; <http://www.sun.com>).



Windows Me

Q I have two hard drives in my HP 9795C that run WinMe. I cannot get task scheduling to work for ScanDisk, Defrag, and Disk Cleanup automatically.

Instead, I get a message in the status column that says it could not start.

A There are several reasons these utilities may not start with Task Scheduler. You may have inadvertently given Task Scheduler the wrong path for the file(s). If it expects to find them in C:\WINDOWS, but they're located somewhere else, Task Scheduler cannot run them and will give you the error message you describe. To fix the problem, click Start, Programs, Accessories, System Tools, and Scheduled Tasks. In the Scheduled Tasks dialog box, right-click the task that does not start and choose Properties from the pop-up menu. Then, either enter the correct path in the Run field or click Browse to locate the program on your hard drive(s).

Both ScanDisk and Disk Defragmenter have to be told what to do after you start them. Normally, you'd apply command line switches for unattended operations. In the WinMe Task Scheduler Help file, there's also a reference to these switches (also called parameters or arguments).

Under normal circumstances the commands you see in the Run field on the Task tab of the utility's Properties

dialog box, when you right-click the task in the Scheduled Tasks dialog box, do not have quotation marks around them. By default, ScanDisk appears as C:\WINDOWS\SCANDISKW.EXE. However, you need to add one or two parameters so ScanDisk will run automatically: /noninteractive (so there is no user intervention required) and /silent (which is optional and suppresses the ScanDisk summary). The command line in the Scheduled Tasks Property dialog box should now read C:\WINDOWS\SCANDISKW.EXE /NONINTERACTIVE /SILENT.

The WinMe defrag application also has command parameters. The Run field should read C:\WINDOWS\DEFRAG.EXE /NOPROMPT /Q, where /noprompt is the instruction not to bother the user and /q tells the program just to defragment files, not to optimize startup programs. If you only want to defrag one drive (D:, for example), the command line should read C:\WINDOWS\DEFRAG.EXE D: /NOPROMPT /Q.

The Windows Disk Cleanup Manager (cleanmgr.exe) has only one parameter. Without it, the program will search all disks. But if you add /ddriveletter (for example /de or /dc), it will only check the drive specified.

Other notes: It's a little thing, but at the bottom-left corner of the Task tab (again, right-click the task and select Properties) found when you open Task Properties, there's an enabling box. If there's no check mark, the task will not start.



Hardware

Q I have a Dell Dimension 2400 computer that runs WinXP Home. It's a 2.8GHz P4 with 768MB of memory and a

160GB hard drive. It runs both McAfee antivirus and Ad-aware. I also have two printers (a Canon i560 and an HP color laser), a docking station for my Dell PDA (personal digital assistant), and an HP scanner (Scanjet 3670) hooked up via USB (Universal Serial Bus). Whenever I attach a card reader (I've tried two—one by Dazzle) or hard drive in an external USB enclosure, I get a message about an unrecognized USB device.

This happens if I use the ports in the back or front of the computer. I reloaded the drivers for mass USB storage devices with the help of Dell tech support. That worked once, but then the same problem arose. I removed all USB devices from the computer, deleted everything under USB in Device Manager, and rebooted twice. I then plugged in the card reader, and it worked.

But as soon as I plugged in the other devices, it stopped working. When I reinstalled the card reader, it gave me the same error. My temporary solution was to add a USB PCI (Peripheral Component Interconnect) card and plug the card reader into that. But I would like to use the USB ports in the front of the computer again. Other USB devices work

just fine (such as my digital camera and external CD/DVD drives). I have downloaded all of the updates from Windows Update without avail.

A The Dazzle models of card reader, once manufactured by MicroTech, are now sold by ZiO, and as of this writing, there's no technical support available from the company's Web site. However, because you're having the same problem with two different card readers, we suspect that brand isn't an issue. You don't mention whether your USB ports are of the 1.0, 1.1, or 2.0 variety, but we likewise suspect this isn't the issue, either.

In fact, it's your report that the device is working on a separate PCI version of a USB retrofit card that provides the best clue. It has to do with both power and throughput speed (bandwidth).

It's not uncommon for USB ports to be high-powered, low-powered, or unpowered. For example, even though they may be wired directly to the system's main board, front-mounted USB ports are often either low-powered or unpowered. They carry data, but don't provide any or much power for the device. It's also why some USB-based products users manuals tell you not to connect them through a hub. It's not the remoteness of the connection that's the problem; instead, it's more common for inexpensive distribution hubs to be either low-powered or unpowered (USB connectors in keyboards, for example). Generally, you need a high-powered USB slot for devices requiring more than 100mA, while low powered slots are for devices using less than 100mA. A self-powered device (one that has its own power supply provided through a wall outlet or batteries) can use any USB port.

However, power may not be your only problem. Although USB 2.0 is significantly faster than USB 1.1 or USB 1.0, all three standards suffer the same limitation: The available bandwidth is shared among the devices using each USB controller. A greedy device can use so much there isn't enough left for other devices, even if you have the ports available. Your PCI card gives you another USB controller and therefore more bandwidth ranging from 1.5Mbps (megabits per second) (USB 1.0) through 12Mbps (USB1.1), up to 480Mbps (full-speed USB 2.0) depending on which standard it supports. This would also explain why your reader worked when it was the only device connected to your main USB connectors but stopped responding when other devices were added. If you try this again, add them one at a time until the reader stops responding. The last device you've added is the culprit.

I am being driven mad by WinXP's desire to resize, re-shape, and reposition folder windows that I use all of the time. This problem did not occur when the system was new, but it keeps getting worse to the point that it happens 99% of the time. I perform system maintenance on a weekly basis. I have tried every trick in the book, but nothing seems to help.

A There are a couple of things you can try. To start, it's normal for WinXP (or just about any version of Windows) to open new Windows Explorer windows to the size and shape of the last Explorer window you closed. Even if you resize that window, subsequent windows from that session will still open in the size and shape of the previous window you closed. And we don't mean that if you have five open, the rest will mimic number four if you quit for the day. It has to be the previous window you closed that will lend its shape and size to the next window you open.

We were unable to find any way to turn this behavior off. Nor could we find a way to specifically customize the size and shape of a particular folder when it's displayed on-screen. You can specify how each folder is displayed by right-clicking in an empty space in the right side, file window, then selecting Customize This folder from the context menu, but all that does is to let you set the template for that folder (and, if you wish, each of its subfolders). In WinXP, the Customize This folder option will appear when you right-click in an empty space in any folder except the top-level template folders My Documents, My Pictures, My Music, and Shared Documents. The customization option will also appear in any subfolders below these main headings, except for any shared subfolder below Shared Documents, such as Shared Music and Shared Pictures. Alas, this folder customization doesn't include the window size, location, or shape.

If you have these folders constantly open, there is another thing to try. WinXP has a setting that allows you to automatically bring back open folder windows when you reboot your system. There are two ways to achieve this, but we'll deal with the simplest (the one that doesn't involve editing the Registry). Open a folder in Windows Explorer. Click Tools and select Folder Options. Click the View tab in the Folder Options dialog box and select Restore Previous Folder Windows At Logon. Click Apply and then click OK. Open and resize your folder windows. Restart the system.

The tiling method is still in WinXP. When you get myriad windows open, right-click an empty spot on the Taskbar and choose Cascade, Tile Horizontally, or Tile Vertically. Now all of your Windows are automatically resized so that all are visible on-screen. To replace them in the mosaic, simply click the Restore button. If you also chose to have these windows reappear when you reboot, they'll come back right where you left them.



Windows XP

Q I am running Window XP Service Pack 1 on a Dell 8250 with a 2.4GHz P4 and 1GB of RAM.

Frequently Asked Questions

Answers to users' most common questions about
Home Network Performance

FAQ My laptop only connects to my wireless router at 11Mbps (megabits per second). How can I increase this speed for faster downloads, Internet gaming, and other things?

It sounds like you are connecting using an 802.11b setup. If you're looking for higher speeds, the solution is to upgrade your current 802.11b hardware with faster 802.11g devices (allowing for speeds up to 54Mbps). The problem here is that both your laptop and wireless router must support the newer 802.11g standard in order for you to make a faster connection—upgrading just the laptop or the wireless router will not give you a faster connection.

Before you upgrade, check the specs for your wireless router and laptop wireless network adapter. If you've purchased either device within the last six months, it may already support 802.11g. If so, you'd only need to upgrade the other (802.11b) device. For example, if you've installed a Linksys WRT54G wireless router, you already have 802.11g capabilities, so it's just a matter of upgrading the older laptop's wireless network adapter. Fortunately, you can easily install an 802.11g network card in your laptop. Upgrades may cost you several hundred dollars, depending on the devices you need to replace.

If the laptop and wireless router already support 802.11g, but you're only connecting at 802.11b speeds, check the configuration of both devices and make sure that neither end is set to 802.11b mode. Opt for the 802.11g mode or select a mixed mode that will handle either speed.

Your overall wireless data speeds will be affected by range, cordless telephone operation, and physical obstructions, so setting up a 54Mbps wireless connection does not ensure 54Mbps connections. Moving to a distant room may reduce your effective data throughput to 24Mbps to 36Mbps (or even lower).

FAQ I connected my PC's network adapter to a hub, but I thought the 10/100 LED (light-emitting diode) was supposed to come on. What's the problem?

You may not be interpreting the LED correctly. The Link LED goes on to indicate a physical connection (if the Link LED is out, the cable is damaged or disconnected), but the 10/100 LED only illuminates when there's a 100Mbps connection. The LED will remain off when the connection is only 10Mbps. Here's how to quickly determine the speed of your connection. If the 10/100 LED is off, there's a slow connection. If the LED is on, there's a fast connection.

A fast (100Mbps) network connection requires that both ends of the connection support 100Mbps communication. So, if the 10/100 LED on your hub is dark, chances are that your PC's network adapter (or NIC [network interface card]) is only operating in the 10Mbps mode. Check the NIC in your Device Manager Network Adapter entry and look for any 10/100 designation. An older 10Mbps NIC may need to be upgraded for 100Mbps operation. If it's a 10/100 NIC, refer to the PC's documentation and check the NIC settings to make sure it's not locked in the 10Mbps mode. Set the NIC to a mixed or 10/100 mode so that it can adapt automatically to establish the best possible connection.

FAQ My broadband cable connection seems awfully slow. Is there a way to measure the speed of my connection before I complain to the cable company?

This is a common complaint, but there are some resources available online to help you measure a connection speed. First, try a bandwidth meter such as the one you can find at <http://www.2wire.com> and then compare your results against another tool such as SpeedGuide's TCP/IP Analyzer (<http://www.speedguide.net>). Repeat your tests over several days (and at different times of day, if possible) to look for any possible trends and compare your results against the service speeds listed in your monthly cable bill.

If the speeds are reasonably close, chances are you're just visiting a slow or complicated Web site. Try some other Web sites—they'll probably respond much better. If the Internet speeds seem unusually slow, check for other PCs on your home network that may also be demanding bandwidth. For example, you won't get top performance with CNN streaming news reports if little Sally is downloading MP3s in her bedroom. Try connecting your PC directly to a cable modem (circumvent any connection-sharing devices such as Internet routers) and try the tests again. If performance is still poor, even with only a single PC connected, it's time to contact your ISP (Internet service provider) and get them involved for some possible resolutions.

Most ISPs make no guarantee of speed. So even if you're getting a connection speed significantly slower than the service level that you're paying for, you may not have any legal recourse.



Battery Confusion & More On 321 Studios' Rebates

My daughter-in-law bought an older Dell Latitude CPi A-Series notebook recently on eBay. The notebook came without a warranty. The only problem with the system is its Fujitsu battery, which needs to be replaced. I contacted Dell to buy a replacement, but the battery it sent was a Dell-branded battery and wasn't the proper battery for the system. We returned the battery and were given credit, but we're still looking for a replacement. We've searched for batteries online, but they all appear similar to the battery we received from Dell.

Bill Wood
Sinton, Texas

Actually, the problem was confusion between this notebook's battery and its removable hard drive. (Removable hard drives are common in business-class notebooks.) Without the manual or diagrams of the notebook, Bill had to use trial and error to identify the battery. He tried removing the actual battery at one point but didn't notice the lock on the bottom of the notebook. He was able to successfully remove the Fujitsu hard drive, and the numbers he found online somehow indicated that the hard drive was a battery.

When we looked up the model number online, however, we found that the "battery" was actually the system's 4.8GB Fujitsu hard drive. This, of course, means Dell most likely sent the correct battery originally. We pointed Bill to some online documentation about Latitude CPi A-Series notebooks, which illustrated how to remove the battery.

We also should point out that Dell recently issued a recall on some notebook batteries due to a possible short-circuit that could cause the battery to overheat. The Latitude CPi A-Series was one of the affected notebooks, but the batteries in question were sold between June 22 and Sept. 15, 2000. That means Bill can safely use the replacement battery from Dell.

We do recommend buying replacement batteries from the manufacturer. Third-party batteries are sometimes cheaper, but if they don't match the original batteries' chemistry and composition, problems could result.

End Of The Line For 321 Studios' Rebates?

In the November 2004 issue, we informed readers waiting for rebates from 321 Studios to be patient as the company worked through its Chapter 11 bankruptcy process. 321 Studios developed a number of popular DVD and video game copying utilities but were forced to file for Chapter 11 due to lawsuits from the movie and video game industries. 321 Studios claimed it should have enough money to pay all pending rebates, but that the process would be slow. At that time, 321 Studios had a Rebate link on its home page (<http://www.321studios.com>), and users could look up their rebate status.

A reader recently informed us that 321 Studios' home page had changed. The Rebate link is now gone, and the Rebate page itself is no longer accessible. 321 Studios has shut down its U.S. operations, and they're unreachable by phone or email. International support numbers are available at <http://www.dvdxcopy.com>, but a notice on the Web site indicates that support is provided only to its users living in specific geographic regions, which include Canada, the United Kingdom, Europe, Australia, and Japan.

It's important that readers understand rebates can be a gamble. In most instances, customers usually get the rebates they're promised, but it's possible that claims may become lost in the mail or at companies' processing centers. In some cases, a little persistence can pay off, but there's always a chance that a company might go out of business. When this occurs, customers are often the last debtors that bankruptcy courts consider, so rebates remain unpaid, leaving customers with little or no recourse.

ACTION EDITOR

Are you having trouble finding a product or getting adequate service from a manufacturer? If so, we want to help solve your problem. Send us a description of the product you're seeking or the problem you're having with customer service. In billing disputes, include relevant information (such as account numbers or screen names for online services) and photocopies of checks. Include your phone number in case we need to contact you.

Letters may be edited for length and clarity; volume prohibits individual replies.

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Crossing The Digital Divide

When I was a teacher, I often assigned timed exercises to students. During one of those, I noticed that a student was obviously upset; she was starting to look desperate, and as I watched, tears began coursing down her cheeks.

She looked up at me, misery written all over her face. "I can't figure out the clock!" she said.

"The clock?" I asked stupidly. "What's wrong with the clock?" I glanced over at the wall on which hung a typical school clock.

"I can't tell what time it is," she said sheepishly. "I don't know when the time is up!"

The student, it turned out, had been reared with digital clocks. The analog clock completely flummoxed her.

That experience has stayed with me. Since then, I've wondered if intergenerational communication isn't becoming less likely to occur, sometimes because of the very technologies that were in fact supposed to *enhance* communication.

Now, I'm awash in technology. As I write this, I'm in an airplane, hurtling through the sky at 600mph. I'm typing on a laptop, working from notes I made on a PDA (personal digital assistant), and listening to James Taylor on a tiny MP3 player.

Of course, I don't really understand the technology that makes this plane fly. In fact, I don't even understand the coffeepot I can see sitting in the galley. In order to brew two pots of coffee and supply hot water for other beverages, it apparently needs four switches, 10 colored buttons, and 12 lights that blink red, yellow, or green.

Naturally, I have no idea what these lights mean. As far as I can see, they're just blinking randomly. You know the sappy movies where the goofy loser earns the love and gratitude of the passengers by landing the airliner after the pilot is incapacitated? That won't be me. Not only could I not fly this airplane, I couldn't make *coffee* on this airplane.

We tend to think of the digital divide as being socioeconomic and to a great extent it is: The folks with the most money have the most access to technology. That's how it's always been—it's unfair, but true. (That divide does seem to be narrowing, of course. Perhaps one day it'll disappear altogether. I wouldn't hold my breath, though.)

But the divide is also generational. These days, I sometimes find myself unable to understand technology used by younger folks. My brother-in-law, for example, has a home theater system that I can't even begin to comprehend. It includes stacks of complicated-looking components festooned with switches and lights and a television that spans almost an entire wall. He has a stack of remote control units, one of which is a "universal" remote that can (theoretically) take the place of the others. (Except that it doesn't quite control

everything, so he still needs the others. Not that it matters to me, since I can't make any sense out of any of them.) The system delivers high-definition digital pictures and theater-quality sound, but I can't even figure out how to watch the local news.

Another example: My daughter occasionally sends me photos via her cell phone camera. They always arrive at my cell phone, but what happens to them after that, I have no idea. I push the button, I see the picture, and then it disappears. She'll ask, "So, did you get that picture of the lady walking her duck on a leash?" I did get that photo, and it was very cute. But I can't show it to anyone be-

cause I don't really know where it went after that. It seems to have disappeared into the bowels of my cell phone. I suppose I could read the users guide, but I feel that a college-educated person shouldn't need to read a 140-page manual just to use a telephone. (Not that I'm stubborn or anything.)

For whatever reasons, some aspects of the digital divide seem to be largely generational. It doesn't do any good to whine about it. It's always been that way: Whenever a new technology comes along, many of us older folks are confused by it, if not downright frightened of it. What we *should* do, of course, is embrace it, do our best to learn about it, and utilize it when appropriate.

Rats. I suppose this means I need to follow my own advice and dig up the manual for that phone. ■



BY ROD SCHER

Rod Scher is a former software developer and a recovering English teacher. He's also the publication editor of Smart Computing and will no doubt continue in that position until such time as his boss reads this column. Contact Rod at rod-scher@smartcomputing.com.

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